JOINT LEGISLATIVE BUDGET COMMITTEE

Tuesday, April 12, 2016

9:00 a.m.

Senate Appropriations Room 109

JLBC

STATE OF ARIZONA

Joint Legislative Budget Committee

1716 WEST ADAMS
PHOENIX, ARIZONA 85007

(602) 926-5491

azleg.gov

JOINT LEGISLATIVE BUDGET COMMITTEE
Tuesday, April 12, 2016
9:00 A.M.
Senate Appropriations, Room 109

MEETING NOTICE

- Call to Order

- DIRECTOR'S REPORT (if necessary).

1. DEPARTMENT OF CHILD SAFETY - Review of FY 2016 Third Quarter Benchmarks.

2. NORTHERN ARIZONA UNIVERSITY - Review of Expenditure and Performance Report of Nonprofit Biotechnology Research Appropriation.

3. ATTORNEY GENERAL - Review of Allocation of Settlement Monies - Standard & Poor's Settlement.

The Chairman reserves the right to set the order of the agenda.
4/8/16
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STATE OF ARIZONA

Joint Legislative Budget Committee

1716 WEST ADAMS
PHOENIX, ARIZONA 85007

(602) 926-5491

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DATE: April 4, 2016

TO: Senator Don Shooter, Chairman
Members, Joint Legislative Budget Committee

THRU: Richard Stavneak, Director RS

FROM: Ben Beutler, Senior Fiscal Analyst BB

SUBJECT: Department of Child Safety - Review of FY 2016 Third Quarter Benchmarks

Laws 2014, 2nd Special Session, Chapter 2 requires the Department of Child Safety (DCS) to submit a report for Committee review of quarterly benchmarks for assessing progress made in increasing the department's number of FTE Positions and in reducing the number of backlog cases.

Recommendation

The Committee has at least the following 3 options:

1. A favorable review.

2. An unfavorable review.

3. Accept the report with no comment.

Analysis

FY 2016 Third Quarter Benchmark - Filled FTE Positions

In accordance with session law, DCS submitted the benchmark report on time at the end of the third calendar quarter. *Table 1* outlines DCS' progress in hiring caseworkers by quarter. DCS had 1,282 filled direct line staff in March 2016, or (124) FTE Positions below its benchmark of 1,406. DCS' highest hiring level occurred in April 2015, with 1,357 direct line staff. Direct line staff includes case-carrying caseworkers, caseworkers in training and hotline staff.

(Continued)

Direct line staff has increased since the Committee last heard this item at its December meeting, growing from 1,249 staff in December 2015 to 1,282 staff in March 2016. While overall hiring is up, the number of case-carrying caseworkers continues to trend downward. The number of case-carrying caseworkers has declined from 955 in December 2015 to 923 in March 2016. The loss of case-carrying caseworkers has been offset by a recent influx of new staff who are currently in training; the number in training has increased from 220 to 285. DCS projects that it will be unable to fill all 1,406 of its appropriated direct line positions by the end of FY 2016.

Table 1

Progress in Hiring Caseworkers by Quarter

		Actuals			
Direct Line Staff Type	Benchmark	June 30, 2015	Sept. 30, 2015	Dec. 31, 2015	March 16, 2016
Case-Carrying Caseworkers	1,190	1,025	972	955	923
Caseworkers in Training	140	164	212	220	285
Hotline Staff	76	74	71	74	74
Total	**1,406**	**1,263**	**1,255**	**1,249**	**1,282**

FY 2016 Third Quarter Benchmark - Reducing the Backlog

Table 2 outlines DCS' progress in reducing the backlog by quarter.

In June 2014, DCS set benchmarks for reducing the backlog. At the time, there were 13,024 backlog cases. The backlog is defined as non-active cases for which documentation has not been entered into the child welfare automated system for at least 60 days and for which services have not been authorized for at least 60 days.

The number of backlog cases has significantly declined since the Committee last heard this item at its December meeting, dropping from 14,470 cases in December 2015 to 10,751 cases in March 2016. DCS has reduced the number of relapsed June 2, 2014 cases from 1,633 to 1,026.

Table 2

Progress Reducing the June 2, 2014 Backlog of 13,024 Cases by Quarter

		Actuals			
Remaining Backlog Cases	Benchmark	June 30, 2015	Sept. 30, 2015	Dec. 31, 2015	March 28, 2016
Total Backlog Cases	1,000	14,946	14,558	14,470	10,751
Relapsed June 2, 2014 Backlog Cases	*0*	*3,139*	*2,253*	*1,633*	*1,026*
Post-June 2, 2014 Backlog Cases	*1,000*	*11,807*	*12,305*	*12,837*	*9,725*

Expenditures on Personal Services

DCS spent $37.6 million on salaries for 2,730 FTE Positions and overtime in the third quarter of FY 2016, or roughly $8.0 million more than in the first and second quarters of FY 2016. An increase of over 100 non-case specialist staff since the first quarter is the primary reason for the expenditure growth.

(Continued)

Expenditures to Reduce the Backlog

DCS was appropriated $23.1 million from the General Fund and $5.9 million from Federal Funds for a total of $29.0 million in FY 2015 for the elimination of the June 2 backlog. Consistent with the Executive's May 2014 Special Session proposal and the Legislature's 3-year spending plan, the FY 2016 budget for backlog elimination was reduced to $12.4 million from the General Fund and $3.9 million from Federal Funds, totaling $16.3 million. In the third quarter of FY 2016, DCS spent $1.7 million on backlog reduction for support services and placements, compared to $3.4 million in the first quarter and $3.3 million in the second quarter. The expenditure figure does not include the cost of caseworker overtime to investigate backlog cases.

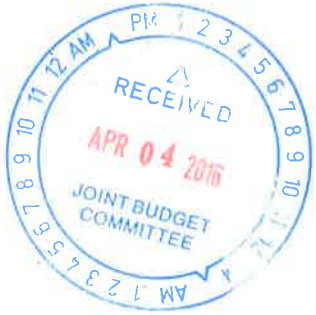
RS/BB:kp

DEPARTMENT OF CHILD SAFETY
STATE OF ARIZONA

Douglas A. Ducey
Governor

Arizona Department of Child Safety

Gregory McKay
Director



March 31, 2016

The Honorable Justin Olson
Chairman, House Appropriations Committee
Arizona House of Representatives
1700 West Washington
Phoenix, Arizona 85007

Re: Department of Child Safety Quarterly Benchmark Progress Report

Dear Representative Olson:

Pursuant to Laws 2014, 2nd Special Session, Chapter 2, Section 6, the Department submits its report including quarterly benchmarks for the third quarter of FY 2016 for assessing the Department's progress increasing the number of filled FTE positions and in reducing the number of backlog cases, as well as updates to the quarterly expenditure plans for FY 2016 monies appropriated for personal services and for reducing the backlog.

If you have any questions, please contact our office at (602) 255-2500.

Sincerely,

Gregory McKay
Director

Enclosure

cc: Richard Stavneak, Director, Joint Legislative Budget Committee
Lorenzo Romero, Director, Governor's Office and Strategic Planning and Budgeting
Ben Beutler, Joint Legislative Budget Committee
Laura Johnson, Governor's Office and Strategic Planning and Budgeting

DEPARTMENT OF CHILD SAFETY

Quarterly Progress Report for Filled FTE Positions and Reducing the Backlog
March 2016

Laws 2014, Second Special Session, Chapter 2, requires the Department of Child Safety (DCS) to submit a report for review by the Joint Legislative Budget Committee (JLBC) containing the progress made in increasing the Department's number of FTE positions and in reducing the number of backlog cases. The backlog cases referenced in Laws 2014, Second Special Session, Chapter 2, are cases that have had no case note documentation entered in the Children's Information Library and Data Source (CHILDS) for the past 60 days. These cases are also referred to as non-active cases, which is the term used through the remainder of this report.

The filled FTE, case count, and expenditures provided in this report are actuals for first, second quarter 2016, third quarter 2016 preliminaries and projections for the remainder of fiscal year 2016 (FY 2016).

Filled FTE Positions

As of June 30, 2014, the Department had a total of 2,392 filled FTE positions, including 982 case-carrying staff, 225 staff in training, 76 FTE in Intake (Hotline), and 1,109 other staff. The total number of FTEs through the first quarter, second quarter and preliminary of FY 2016 is outlined below.

Table 1. Progress on Filled FTE Positions in Fiscal Year 2016 Qtr 3

	Quarter 1 Actual	Quarter 2 Actual	Quarter 3 Preliminary [1]	Quarter 4 Projection
Total Authorized FTE	**3,057.1**	**3,057.1**	**3,057.1**	**3,057.1**
Authorized Attorney General FTE Positions	**234.2**	**234.2**	**234.2**	**234.2**
Total Authorized DCS FTE Positions	**2,822.9**	**2,822.9**	**2,822.9**	**2,822.9**
Authorized Caseworkers	**1,406.0**	**1,406.0**	**1,406.0**	**1,406.0**
Filled Caseworkers (Active)	972.0	955.0	923.0	940.0
Filled Caseworkers (Training)	212.0	220.0	285.0	283.0
Filled Intake (Hotline)	71.0	74.0	74.0	75.0
Subtotal Filled	1,255.0	1,249.0	1,282.0	1,298.0
Authorized Non-Caseworker Personnel	**1,416.9**	**1,416.9**	**1,416.9**	**1,416.9**
Filled Supervisors (Unit, APM)	254.0	257.0	254.0	254.0
Filled Case Aides	279.0	280.0	283.0	283.0
Filled Other Non-Caseworkers	804.0	858.0	911.0	911.0
Subtotal Filled	1,337.0	1,395.0	1,448.0	1,448.0
Total Filled FTE	**2,592.0**	**2,644.0**	**2,730.0**	**2,746.0**

1/ Filled FTE Position counts are as of March 16, 2016 and actuals will be updated in the next quarterly report.

Progress Reducing the Cases Inactive as of June 2, 2014

Laws 2014, Second Special Session, Chapter 2 requires DCS to report the disposition (outcome) of the 13,024 cases that were non-active as the close of business on June 2, 2014, including:

- Number of cases currently closed,
- Number of cases currently being investigated,
- Number of cases currently in an out-of-home placement,
- Number of cases currently receiving in-home preventive support services.

The Department established the following quarterly benchmarks for assessing progress in reducing the number of non-active cases:

- Number of cases that were non-active as of June 2, 2014 that have been activated
- Number of activated cases in the investigation phase
- Number of activated cases receiving in-home services
- Number of activated cases in out-of-home placements and receiving out-of-home support services
- Number of activated cases closed

Table 2. Reducing the June 2, 2014 Backlog for Fiscal Year 2016 Qtr 3

	Quarter 1 Actual [1]	Quarter 2 Actual	Quarter 3 Actual [2]	Quarter 4 Projection
Investigation Status				
Open Investigation	2,886	2,028	1,436	1,087
Closed Investigation	9,981	10,844	11,448	11,800
No investigation documentation in CHILDS	157	152	140	137
Case Status				
Receiving In-Home Preventive Services	51	41	98	42
Receiving Out-of-Home Support Services and/or Placement	453	403	456	351
Cases with no service or placement payments in CHILDS	2,858	1,693	914	554
Cases Closed	9,662	10,887	11,556	12,077
Current number of non active cases	14,558	14,470	10,751	8,500
Original 13,024 backlog cases reverted to non active status	2,253	1,633	1,026	850

1/ Previous quarter actuals are based on service date expenditures as of the point in time the data is extracted. Changes will occur if additional invoices are received and payments are issued, and as other billing issues are resolved.

2/ Investigation and case status counts are as of March 28, 2016.

Process to Address the Current Non-Active Cases

As of March 28, 2016, the total number of non-active cases (cases with no case note entered in the past 60 days) was 10,751. The number of non-active cases has decreased from a peak of 15,504 for the quarter that ended December 31, 2014. This is a net reduction of 4,753 non-active cases and a 30.6% reduction in the non-active case total since that peak.

The progress made in quarter 3 of FY 2016 is the direct result of continued work in the strategic areas described in the quarter 2 report: selected assistance work teams, regional action plans, leveraging partnerships and Model Field Offices. Additionally, the Department continues utilizing weekly performance huddle calls as means of maintaining progress and establishing performance accountability.

The efforts of addressing non-active cases continues in the area of completing investigations, based on the knowledge that the majority of non-active cases are investigation cases rather than in-home service or out-of-home placement cases.

Update on reduction strategies:

- ***Selected Assistance Work Teams*** - The Department continues to utilize a team of approximately 60 DCS employees who receive overtime or stipend pay to work eight hours per week, in addition to their normal work hours. These resources are assigned to specific field offices to review cases, identify actions required to complete the investigation, complete field response activities, and complete the final quality assurance review when a case has completed all required investigative process steps. Resource assignments are reviewed on a monthly basis to ensure continued engagement, productivity, and quality of work. As individual offices eliminate backlog of open investigations, resources are moved to other offices to provide support.

- ***Regional Plans*** – DCS regional Program Managers have continued refining action plans to address the backlog of inactive cases. These action plans include continuing "offline" time for case managers to complete actions on open cases while not being assigned new cases, and identifying additional resources at the regional level to support investigations and clinical reviews. Regional leadership established accountability for workload completion through data reporting at the unit, section, and regional levels. Data reporting is monitored weekly and monthly to ensure that accountability is maintained and any barriers are identified and addressed timely.

- ***Expanding Administrative and Case Review Capacity by Leveraging Partnerships*** – In the last quarterly report, the Department described that many cases remain in the investigations phase of the process. As a means of expanding capacity to complete investigations the Department, with grant support from Casey Family Programs, partnered with a qualified local service provider in Maricopa County to support field offices with response activities. In these targeted offices, these qualified resources engage with DCS workers to identify specific actions required to complete an

investigation. These responders, who are knowledgeable in the Department's policies, procedures and safety assessment model, then engage with families to complete the investigation activities. Through this partnership, the Department has increased the number of completed investigations each month. These efforts will continue until the grant funding is exhausted, which is currently estimated to be in November 2016. Based on the current rate of progress, the Department estimates that much of the backlog will be eliminated by that time.

- ***Model Field Offices*** – Standardization efforts continue in the three model offices in the state. Through these efforts, the Model Offices are now adhering to a standard investigation to ongoing case transfer process. Investigations cases are transferring to ongoing case managers quickly after a child's removal, so that investigators are no longer case managing dependency cases and are free to focus on investigations. This process is now being implemented in offices in geographic proximity to the three Model Office sites, and will continue to roll out across the state through calendar year 2016.

Summary of outcomes and Q3 FY2016 projections

Quarter 2 performance realized a 25.7% improvement, and nearly a 3,700 case reduction, in the total number of inactive cases. These efforts have been possible through the significant efforts of the investigations specialists, support resources from around the Department, and actions plans that are continually refined to be most productive. The Department continues to hold a commitment to safely and sustainably reducing this backlog by completing investigations rather than adding case notes to activate incomplete investigations. This is evident not only in the reduction of the overall inactive cases, but the reduction of cases that relapsed into inactive status.

The Department will continue efforts in the four strategic areas described herein, while continuing to seek additional ideas and strategies to compliment these efforts. Through this focused approach, the Department is projecting quarter 3 FY2016 to end with approximately 8,500 inactive cases.

Expenditures for Personal Services in FY 2016

The table below shows the preliminary third quarter personal services expenditures, employee related expenditures and FTE for FY 2016.

Table 3. Projected Expenditures for Personal Services Monies Appropriated in Fiscal Year 2016				
	Quarter 1 Actual	Quarter 2 Actual	Quarter 3 Preliminary	Quarter 4 Projection
Case Specialists				
P/S	14,381,883	14,194,564	17,392,952	16,056,354
ERE	6,094,512	6,844,593	6,788,416	6,684,723
FTE	1,255	1,249	1,282	1,298
Field Supervisors				
P/S	2,910,756	2,872,844	3,643,966	3,122,246
ERE	1,233,471	1,385,280	1,425,931	1,276,998
FTE	254	257	254	254
Case Aides				
P/S	3,197,247	3,155,604	3,526,398	1,983,685
ERE	1,354,876	1,521,627	1,383,662	811,327
FTE	279	280	283	283
Filled Other Non-Case Specialists				
P/S	9,356,961	9,425,919	13,028,889	11,559,125
ERE	3,823,214	4,377,236	5,009,320	4,971,673
FTE	804	858	911	911
Total FTE	**2,592**	**2,644**	**2,730**	**2,746**
Total P/S	**29,846,847**	**29,648,931**	**37,592,206**	**32,721,408**
Total ERE	**12,506,073**	**14,128,735**	**14,607,329**	**13,744,721**
TOTAL PS/ERE	**42,352,920**	**43,777,666**	**52,199,535**	**46,466,129**

* Quarterly Backlog Report Personal Services and ERE financial projections are taken from across SLIs from General Operating, Overtime, Records
- All appropriations other than the General Operating appropriation are intended solely for PS/ERE use only

Expenditures for Reducing the Backlog

The FY 2016 budget includes $12.4 million from the General Fund to reduce the backlog of non-active cases. This appropriation includes funding for services and placement costs for non-active cases already in placements and receiving services, or for children who receive services after their case is reactivated and investigated of the 13,024 inactive cases as of June 2, 2014.

Table 4 shows the preliminary third quarter expenditures for FY 2016 related to the cases that were non-active as of June 2, 2014, and projected costs for the remaining quarter.

Table 4. Expenditure Progress for Fiscal Year 2016 Qtr. 3

	Quarter 1 Actual [1]	Quarter 2 Actual [1]	Quarter 3 Preliminary	Quarter 4 Projection	Total	Expenditures to Address New Inactive Cases	Total Appropriation
In-Home Support Services	88,765	104,318	38,621	72,800	304,504	2,477,596	2,782,100
Out-of-Home Support Services	1,327,112	1,304,902	431,208	956,795	4,020,017	1,062,183	5,082,200
Out-of-Home Placements	2,020,743	1,934,822	1,223,260	1,513,477	6,692,302	(2,148,402)	4,543,900
Total	**3,436,620**	**3,344,042**	**1,693,089**	**2,543,072**	**11,016,823**	**1,391,377**	**12,408,200**

1/ Previous quarter actuals are based on service date expenditures as of the point in time the data is extracted. Changes will occur if additional invoices are received and payments are issued, and as other billing issues are resolved.

2/ Investigation and case status counts are as of March 14, 2016 and actuals will be complete in the next quarterly report.

While the Department only reports expenditures related to the 13,024 cases that were inactive on June 2, 2014, significant work is also required to address the additional cases that have continued to become inactive since June 2.

The FY 2016 first quarter actual expenditures include closed cases with outstanding payments for services already rendered and for current cases that remain open because in-home or out-of-home services are being provided to the family. These expenditures do not include those cases that were closed after June 2, 2014 and then reopened at a later date due to another Hotline report as previously published in the report.

The Department anticipates that the total expenditures for Out-of-Home Placements for cases that were inactive on June 2, 2014 will be $6,692,302 and the shortfall of ($2,148,402) shown in this outline will be supported by Out-of-Home Placement SLIs.

2

STATE OF ARIZONA

Joint Legislative Budget Committee

1716 WEST ADAMS
PHOENIX, ARIZONA 85007

(602) 926-5491

azleg.gov

DATE: March 31, 2016

TO: Senator Don Shooter, Chairman
Members, Joint Legislative Budget Committee

THRU: Richard Stavneak, Director RS

FROM: Matt Beienburg, Fiscal Analyst MB

SUBJECT: Northern Arizona University - Review of Expenditure and Performance Report of Nonprofit Biotechnology Research Appropriation

Request

The FY 2015 General Appropriation Act (Laws 2014, Chapter 18, Section 132) requires Northern Arizona University (NAU) to provide an expenditure and performance report resulting from an appropriation of $3,000,000 to NAU yearly from FY 2015 through FY 2019 to grant to a nonprofit biomedical research entity. The university shall transmit the report to the Joint Legislative Budget Committee (JLBC) for its review on or before February 1 of each year.

Recommendation

The Committee has at least the following 2 options:

1. A favorable review of NAU's biomedical research report.

2. An unfavorable review of NAU's biomedical research report.

Analysis

The FY 2015 budget requires that NAU contract with a nonprofit biomedical research entity for a $3 million annual grant over a 5-year period. The grantee is required to report to NAU annually. The university is then required to transmit the report to the JLBC by February 1. The following information is required to be provided by the grant recipient:

(Continued)

1. The type and amount of expenditures from all state sources of monies.

2. A description of each grant received as well as the positions and locations of positions solely or partly funded by the state.

3. Performance measures, including outcomes related to use of state monies, progress made toward the achievement of each outcome, reportable inventions or discoveries made and publications related to research funded by state monies.

The grantee is the Translational Genomics Research Institute, also known as TGen. TGen is a nonprofit organization which studies the genetic components of diseases to develop diagnostics, prognostics and therapies for cancer, neurological disorders, diabetes and other complex medical conditions.

All Sources of State Monies

In addition to the $3 million NAU appropriation, TGen also receives $2 million from the Department of Health Services (DHS) from the Tobacco Tax and Health Care Fund - Health Research Account.

The state funding provides unrestricted financial support for TGen's operations. TGen reports that the state monies are used to supplement research grants, whether by covering indirect costs not funded by awards amounts, or by allowing TGen to "match" project costs in accordance with grant program criteria. TGen has indicated that the equipment and support services funded with state dollars in 2015 increased the organization's capabilities and helped secure grant awards related to brain injury, tumor suppression and Alzheimer's disease therapy among others.

The expenditures of the TGen monies from NAU in the first half of FY 2016 are summarized in *Table 1*:

Table 1

TGen Expenditures of FY 2016 NAU Grant Through December 2015

Utilization	Expenditure
Research Capital 1/	$ 776,000
Research Supplies 2/	280,000
Research Equipment Service Maintenance	184,000
Research Outside Services 3/	60,000
Proposal Development	50,000
Project Management	50,000
Technical Infrastructure	50,000
Education	50,000
NAU Grant Total	**$1,500,000**

1/ Includes tissue processing equipment, DNA sequencers, and other laboratory instruments.
2/ Includes consumable items such as DNA kits, biological samples, beakers, etc.
3/ Includes costs of contracted services associated with manuscript expenses, externships, DNA sequencing, and research tool development.

(Continued)

Grants and Full-Time Positions

In 2015, TGen applied for 101 grants totaling $85 million. Of that amount, TGen was awarded 22 grants totaling $7.8 million. *(Please see the NAU report attached to this memo for the list of grant awards.)* As described above, TGen reports that these projects and others are supported in part by the underlying technology funded by state appropriations.

TGen reports that all of its staff are Arizona residents and that in 2015, 21 new FTE Positions were created with total salaries and benefits of $1.7 million.

Overall, TGen reported a total of 362 employees and $66.5 million in revenues as of 2013 in its most recent publicly disclosed filings.

Performance Measures

TGen's 2015 report highlights the following progress and outcomes of its research initiatives:

- The American Association for Cancer Research (AACR) announced in May 2015 that a TGen paper describing potential drug targets based on the genomic sequencing of breast cancer patients was the most cited study in 2013 of any published that year by AACR's journal, *Molecular Cancer Therapeutics*.

- In November 2015, Stand Up To Cancer (SU2C) selected TGen researchers to lead a "Pancreatic Cancer Dream Team" in an effort to double the survival rate of patients with pancreatic cancer.

- The "SU2C-MRA Melanoma Dream Team," co-led by TGen faculty, enrolled its first patients in a clinical trial to treat advanced melanoma skin cancer, with several hundred more patients with the most deadly sub-type of this skin cancer expected to enroll over the next 2 years.

- TGen developed a clinical trial for patients suffering from small cell carcinoma of the ovary, hyperglycemic type (SCCOHT), an aggressive type of ovarian cancer.

- TGen researchers contributed to a study published in November 2015 showing that liquid biopsies (referred to as "advanced blood tests") can detect cancer mutations from multiple different tumor sites within a patient.

- TGen began the third season of a concussion/brain injury study to discover biomarkers that might indicate when an athlete is too injured to play.

TGen also lists 14 U.S. patents issued to it in 2015, in addition to 46 others pending further review or issuance, resulting from projects funded by external sponsors and supported by the technologies provided for by state funding. The attached pages from the TGen report provide a list of these patents, as well as the organization's 2015 scientific publications.

RS/MB:lm

NORTHERN ARIZONA UNIVERSITY

Office of the Vice President for Research

Northern Arizona University
PO Box 4087
Flagstaff, AZ 86011-4087

928-523-4340
928-523-1075 fax
www.research.nau.edu

January 25, 2016

Director Richard Stavneak
Joint Legislative Budget Committee
1716 W. Adams
Phoenix, AZ 85007

Director Stavneak:

In accordance with Laws 2014, Chapter 18, Section 132, enclosed please find the annual expenditure and performance report provided to Northern Arizona University (NAU) by the Translational Genomics Research Institute (TGen). The report details the grant activity and performance measures as related to state funding for fiscal year 2015.

As demonstrated in the attached report, the $3 million state investment in TGen has leveraged external funding that supports essential research activities. These grants include dollars to support research on breast cancer, pancreatic cancer, Alzheimer's disease, Amyotrophic Lateral Sclerosis (ALS).

NAU appreciates its partnership with TGen and looks forward to the continued individual success of the organization as well as the continued success of our partnership. Our relationship exemplifies the importance of the biosciences to NAU and Arizona's economy. We are gratified that the state recognizes our ongoing relationship and sees the benefits that derive from scientific discoveries.

Do not hesitate to contact me if you have any questions regarding the attached report or NAU's partnership with TGen and the state as they relate to these grant monies.

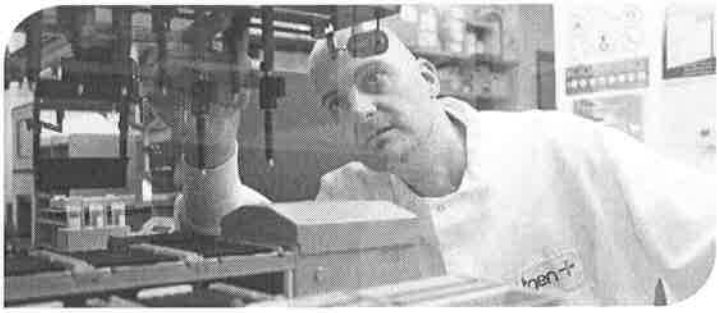
Sincerely,

NORTHERN ARIZONA UNIVERSITY

William Grabe

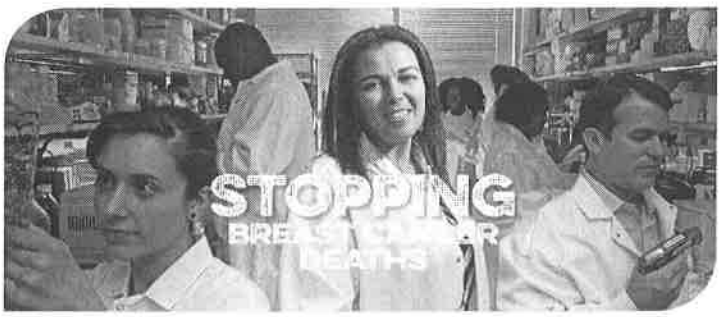
William Grabe, PhD
Vice President for Research

cc: Matt Beienberg, Fiscal Analyst, JLBC
Christy Farley, Vice President for Government Affairs and Business Partnerships, NAU



tgen®

Summary of 2015 Activities



Summary of 2015 Activities

During 2015, TGen met the goal of H82703, Fifty-first Legislature, Second Regular Session, Chapter 18, Section 132, as adopted by the Arizona Legislature pursuant to the FY2014-2015 budget and signed by the Governor on April 11, 2014 to support a non-profit medical research institute in Arizona that specializes in biotechnology and that collaborates with universities, hospitals, biotechnology and other health science research centers.

The following report highlights TGen outcomes and progress over the past year that have been supported, in part, by the $3M per year in general funds appropriation as distributed by Northern Arizona University, as well as the $2M per year in tobacco tax funding received from the Arizona Department of Health Services.

Expenditures from all state sources of monies

2015 Expenditure Report for NAU Agreement Actual Expenses from January 1, 2015 - December 31, 2015	**Second Half FY15** January 15 - June 15	**First Half FY16** July 15 -December 15	**Total**
NAU / State of Arizona Grant:			
Research Supplies	$540,000	$280,000	$820,000
Research Outside Services	230,000	60,000	290,000
Research Capital	230,000	776,000	1,006,000
Research Equipment Service Maint	300,000	184,000	484,000
Proposal Development	50,000	50,000	100,000
Project Management	50,000	50,000	100,000
Technical Infrastructure	50,000	50,000	100,000
Education	50,000	50,000	100,000
TOTALS	$1,500,000	$1,500,000	$3,000,000
Capital Equipment detail:	AutoStainers (x2) Tissue Processor Leica Microlome DNA Shearing Sonicatoer Stablilizor T1 Instrument Bullet Blender Homogenizer	HiSeq 4000	

Other State Funding	**Second Half FY15** January 15 - June 15	**First Half FY16** July 15 -December 15	**Total**
ADHS Fixed Price Contract:			
Personal Services	$74,865	$56,047	$130,912
Professional & Outside Services (Consultants)	135,563	841,629 *	$977,192
Equipment	779,749		$779,749
Facilities and Administrative	21,042	91,105	$112,147
TOTALS	$1,011,219	$988,781	$2,000,000

*Estimated figure

NOTE: All employees reside in the state of Arizona.
No employees identified within this agreement are supported by any other State funding or the TGen Foundation.

Grant Support

In additional to philanthropic donations and research contracts, grant funding is an important funding source for research. In 2015, TGen investigators submitted 101 grants totaling $85M *(See Appendix A for complete listing)*. During this period, TGen was awarded 22 grants, totaling $7.8M. The projects outlined below, in addition to many others, are supported in part under the $3M per year in general funds appropriation as distributed by Northern Arizona University, as well as the $2M per year in tobacco tax funding received from the Arizona Department of Health Services.

a. Five-year grant from the National Institutes of Health totaling $1,665,818 to Dr. Matt Huentelman to study neural system dynamics and gene expression supporting successful cognitive aging.

b. Five-year grant from NIH totaling $778,502 to Dr. Matt Huentelman to study epigenetic, neuroimaging and behavioral effects of hypertension in the aging brain.

c. Two-year grant from the National Institutes of Health totaling $735,851 to Dr. Patrick Pirrotte to study preservation of Dried Plasma Spots for downstream proteomic applications.

d. Four-year grant from NIH totaling $471,542 to Dr. Matt Huentelman to study a cell activity tagging toolbox, also know as CATT, to better understand development and application of neuronal cell activity.

e. One-year grant from the Centers for Disease Control and Prevention totaling $339,997 to Dr. Paul Keim to study DNA sequencing and bioinformatics analysis of pathogens with imp.

f. One-year grant from the Arizona Biomedical Research Commission totaling $225,000 to Dr. Jesse Hunter to study identification and functional characterization of novel neuromuscular disease causing variants in Arizona infants and children.

g. Two-year grant from the Avon Foundation totaling $200,006 to Dr. Bodour Salhia to study the development of novel targeted therapeutic approaches for breast cancer metastasis to the brain.

h. Two-year grant from Science Foundation Arizona totaling $200,000 to Dr. Jeffrey Trent on behalf of Dr. Muhammad Murtaza to study the future of translational research.

i. Two-year grant from the National Institutes of Health totaling $176,403 to Dr. David Craig to study somatic mutations in the brain during Alzheimer's disease.

j. Two-year grant from the Department of Defense totaling $73,654 to Dr. Kendall Van-Keuren Jensen to study exosome-mediated transmission of neurodegeneration in Amyotrophic Lateral Sclerosis (ALS).

k. Two-year grant from the National Foundation for Cancer Research totaling $300,000 to Drs. Daniel Von Hoff and Haiyong Han to study a novel approach to targeting cancer cells through modulating global gene transcription using super-enhancer (SE) inhibitors

l. One-year grant from the Arizona Alzheimer's Research Consortium totaling $205,000 to Dr. Matt Huentelman for four projects involving "exceptional" phenotypes, the DYRK1A gene, validation of RNA targets in serum and CSF and characterization of mitochondrial pseudogenes in Alzheimer's disease.

m. Three-year grant from the National Institutes of Health (NIH) totaling $2,062,360 to Dr. Kendall Van Keuren-Jensen and Dr. Matt Huentelman for a study of biomarkers that could predict patient outcomes, following injuries that result in bleeding in the brain.

n. Five-year grant from NIH totaling $1,033,331 to Dr. Nhan Tran to study the novel role of TROY-EGFR gene complex in glioblastoma brain tumor invasion and resistance.

o. Two-year grant from the NIH totaling $487,540 to Dr. Matt Huentelman for a study identifying pathogenic mechanisms important in multiple system atrophy (MSA), for which there currently are no disease preventing or modifying treatments.

p. Two-year grant from NIH/National Cancer Institute totaling $445,005 to Dr. Haiyong Han for a study targeting the PhD2 gene in pancreatic cancer.

q. One-year grant from the Centers for Disease Control totaling $347,043 to Dr. Paul Keim for DNA sequencing and bioinformatics analysis of pathogens, including emergency response as needed for disease outbreak.

Outcomes and Progress

In 2015, TGen advanced a series of innovative research initiatives that yielded numerous scientific discoveries (a good number with potential clinical application), established national and international collaborations, and led new and exciting clinical trials with promising results. These research initiatives benefit the State of Arizona by bringing new clinical trials, treatments and therapies to Arizona residents; creating new knowledge-based jobs in the state; supporting ongoing and new research collaborations with state-wide institutions and companies; and generating significant economic impact via direct and indirect spending within the state. Notable are:

- The American Association for Cancer Research (AACR) announced that a TGen scientific paper describing potential drug targets following the unprecedented genomic sequencing of 14 metastatic triple-negative breast cancer patients was the most cited study in 2013 of any published that year by AACR's journal Molecular Cancer Therapeutics.

- In early November, Stand Up To Cancer (SU2C) selected Dr. Daniel Von Hoff and his team to lead another Pancreatic Cancer Dream Team; Dr. Von Hoff's second such team (his first accrued more pancreatic cancer patients than any Dream Team to date). This selection validates the success that Dr. Von Hoff and his colleagues have made, and signifies SU2C's belief that his team offers the most promising new approaches to treat pancreatic cancer. The overarching aim for the research grant is to develop therapies that greatly improve a person's survival over and above what Dr. Von Hoff and his team have already achieved.

- Building clinically on work led by Dr. Jeffrey Trent, TGen developed a clinical trial for patients from around the world who suffer from small cell carcinoma of the ovary, hyperglycemic type – also known as SCCOHT – a particularly aggressive type of cancer that mostly strikes young women and girls

- Also in a landmark trial, the SU2C-MRA Melanoma Dream Team –co-led by Dr. Trent and Yale's Dr. Pat LoRusso– enrolled its first patients, with several hundred more patients with the most deadly sub-type of this skin cancer expected to enroll over the next two years.

- Work supported by the Ben & Catherine Ivy Foundation led to three projects focused on glioblastoma. The first, a significant and innovative trail with colleagues at Barrow Neurological Institute will test new drugs in a Phase Zero clinical trial to determine if they can penetrate the blood-brain barrier and be effective against the tumor. Another described our study published in the Oxford University Press journal Neuro-Oncology, reviewing the state-of-the-art treatments for glioblastoma, and a related clinical trial at UC San Francisco. And the third, work with the Allen Brain Institute in Seattle, Washington, to update the Ivy Glioblastoma Atlas Project.

- Technology advancements in recent years now allow TGen and other scientists to look deeper into the human genome than ever before, which has furthered the research of several faculty members into so-called liquid biopsies – more or less an advanced blood test – for detecting the smallest of cancer cells (or the content of those cancer cells) swimming in a person's blood, looking for a spot to take root and become a full-blown tumor.

- In addition, we started a third season of a concussion/brain injury study to discover biomarkers that might indicate when an athlete is too hurt to play. And our clinic focused on children with rare or undiagnosed disorders continues to provide hope and answers to parents who endure diagnostic odysseys that at times spans multiple years.

In terms of clinical research and clinical trials, TGen has a direct clinical research site through a strategic alliance with the Virginia G. Piper Cancer Center (VGPCC) Clinical Trials Program at Scottsdale Healthcare. Since 2005, these clinical trials have provided options that did not exist before to Phoenix-area patients as well as patients from all over the country. The program conducts clinical trials across a number of cancer types. Further development of cancer specific divisions in pancreatic cancer, breast cancer, leukemia, prostate cancer, lung cancer, and melanoma are under development.

Dr. Daniel Von Hoff, TGen's physician-in-chief also serves as the programs chief scientific officer. The program focuses on clinical trials with targeted agents and genomics-based individualized therapy and with an initial focus on cancer, allows the unique opportunity for TGen to transition its laboratory-based research to patient care centered on individualized therapy. The program brings new clinical research into the community, to those patients who would otherwise have to travel someplace else for access to new therapies or prevention agents.

Patents and Licenses

During 2015, TGen filed numerous patent applications on TGen-generated research. The list below reflects patent applications resulting from projects funded by external sponsors, but supported by underlying technology provided for by State of Arizona funding via the $3M per year in general funds appropriation as distributed by Northern Arizona University, as well as the $2M per year in tobacco tax funding received from the Arizona Department of Health Services.

2015 Issued Patents

Issue Date	Tech Id	Title	App Type	Country	Status	Patent No.
01/06/15	100210-135 MARCKS	Compositions and Methods Useful in Enhancement of Memory	Nationalized PCT	United States	Issued	8,927,498
01/07/15	080723-073 NHERF1	Methods of Identifying and Treating Glioblastoma	Nationalized PCT	Europe	Issued	2,350,656
01/07/15	080723-073 NHERF1	Methods of Identifying and Treating Glioblastoma	European	France	Issued	2,350,656
01/07/15	080723-073 NHERF1	Methods of Identifying and Treating Glioblastoma	European	Germany	Issued	2,350,656
01/07/15	080723-073 NHERF1	Methods of Identifying and Treating Glioblastoma	European	Switzerland	Issued	2,350,656
01/07/15	080723-073 NHERF1	Methods of Identifying and Treating Glioblastoma	European	United Kingdom	Issued	2,350,656
02/24/15	080723-073 NHERF1	Methods and Kits to Identify Invasive Glioblastoma	Nationalized PCT	United States	Issued	8,962,581
03/24/15	070614-094 DPC-046	Compounds, Pharmaceutical Compositions And Method Of Use Of 2-Aryl Pyridylazoles	Nationalized PCT	United States	Issued	US8987309
03/24/15	071106-050 HDAC	Compounds, Pharmaceutical Compositions And Methods Of Use Of Hydroxamic Acid Derivatives	Utility	United States	Issued	US8987468
07/29/15	100223-138 FGFR2-EP1	Methods Of Determining Susceptibility Of Tumors To Tyrosine Kinase Inhibitors	Nationalized PCT	Europe	Issued	2547698
07/29/15	100223-138 FGFR2-UK1	Methods Of Determining Susceptibility Of Tumors To Tyrosine Kinase Inhibitors	Nationalized PCT-Validated	United Kindgom	Issued	2547698
07/29/15	100223-138 FGFR2-CH1	Methods Of Determining Susceptibility Of Tumors To Tyrosine Kinase Inhibitors	Nationalized PCT-Validated	Switzerland	Issued	2547698
07/29/15	100223-138 FGFR2-DE1	Methods Of Determining Susceptibility Of Tumors To Tyrosine Kinase Inhibitors	Nationalized PCT-Validated	Germany	Issued	602011018280.3
07/29/15	100223-138 FGFR2-FR1	Methods Of Determining Susceptibility Of Tumors To yrosine Kinase Inhibitors	Nationalized PCT-Validated	France	Issued	2547698
09/08/15	090223-093 PTEN	Benzamide Derivatives	Nationalized PCT	United States	Issued	9123901
09/08/15	100311-155 Alz Markr	Markers Associated With Alzheimer's Disease	Utility	United States	Issued	9127316
09/08/15	100517-142 CocciQuan	Method Of Detecting Coccidioides Species	Utility	United States	Issued	9127321
09/22/15	100223-138 FGFR2	Methods Of Determining Susceptibility Of Tumors To Tyrosine Kinase Inhibitors	Utility	United States	Issued	9140689
11/10/15	090113-092 INPP5A	Identification and Treatment of Cancer Subsets	Utility	United States	Issued	9,180,136
11/24/15	120530-180 BTIM-4	Hybridoma Clones and Monoclonal Antibodies to ING4	Utility	United States	Issued	9,193,785
12/01/15	130402-200 ACC	Methods for the Treatment of Cancer	Utility	United States	Issued	9,198,910
12/29/15	110922-162 ACC	Therapeutic Targets For Adrenocortical Carcinoma	Utility	United States	Issued	9,222,138
12/29/15	110509-156 Autophagy	Autophagy Inhibitors	Nationalized PCT	United States	Issued	9,221,760
12/29/15	091203-131 Tong III	Benzamide Derivatives	Nationalized PCT	United States	Issued	9,221,773

2015 Patent Applications Filed*

Issue Date	Tech Id	Title	App Type	Country	Status	Serial No.
01/02/15	120410-176 ExPEC	Primers, Assays And Methods For Detecting An E. Coli Subtype	Nationalized PCT	United States	Filed	14/412,667
01/13/15	091001-123 TROY	Methods Used to Identify and Treat Glioblastoma	Continuation	United States	Filed	14/595,423
01/30/15	120410-176 ExPEC	Primers, Assays And Methods For Detecting An E. Coli Subtype	Nationalized PCT	Europe	Filed	13813927.4
02/04/15	130227-191 CBI	Method of Identifying Tyrosine Kinase Receptor Rearrangements in Patients	PCT	PCT	Prosecution by Other Party	PCT/ US2015/014518
02/06/15	150202-232	Improved Biomarker Enrichment Methodologies	Provisional	United States	Filed	62/112,873
02/23/15	080723-073 NHERF1	Methods and Kits to Identify Invasive Glioblastoma	Continuation	United States	Filed	14/629,431
03/11/15	100219-136 Harmine	Compounds That Inhibit Tau Phosphorylation	Continuation	United States	Filed	14/645,069
03/18/15	120914-186 Microthri	Isolated Genes And Transgenic Organisms For Producing Biofuels	Nationalized PCT	United States	Filed	14/429,287
03/19/15	071106-050 HDAC	Compounds, Pharmaceutical Compositions And Methods Of Use Of Hydroxamic Acid Derivatives	Continuation	United States	Filed	14/663,180
03/23/15	140102-219 SCCO	Compositions, Methods and Kits for Characterizing and Screening for Small Cell Ovarian Carcinoma	PCT	PCT	Filed	PCT/ US2015/022043
03/25/15	140210-220	Systems and Methods for Preclinical Models of Metastases	Utility	United States	Filed	14/668,260
03/27/15	140521-224	Biomarkers and Methods of Diagnosing and Prognosing Mild Traumatic Brain Injuries	Provisional	United States	Filed	62/139,328
4/4/15	140403-222	Methods of Treating Cancer	PCT	PCT	Filed	PCT/ US2015/24390
4/9/15	150226-234	Methods Used to Treat Cancer	Provisional	United States	Filed	62/145,040
4/13/15	150316-235	Detecting Metastatic Cancer with Epigenomic Biomarkers Using Non-Invasive Methodologies	Provisional	United States	Filed	62/146,516
4/17/15	150417-238	Quality Assessment Of Circulating Cell-Free Dna Using Multiplexed Droplet Digital Pcr	Provisional	United States	Filed	62/149,386
4/24/15	150410-236	Compositions and Methods for Augmenting the Nasal Microbiome	Provisional	United States	Filed	62/152,547
5/15/2015	140219-221	Methods of Assesing a Risk of Developing Necrotizing Meningoencephalitis	Continuation In Part	United States	Filed	14/713,134
5/22/15	150522-241	Systems and Methods for Amplicon Sequencing Analysis	Provisional	United States	Filed	62/165,612
5/25/15	150513-239	Methods for the Diagnosis and Treatment of Neurological Conditions	Provisional	United States	Filed	62/166,038
6/12/15	150609-243	Targeted Therapies for Cancer	Provisional	United States	Filed	62/174,950
6/17/15	150416-237	Systems and Methods for Obtaining Biological Molecules from a Sample	Provisional	United States	Filed	62/181,041
07/01/15	150608-242	Systems and Methods for Treating Cancer	Provisional	United States	Filed	62/187,442
07/09/15	150519-240	Methods Used to Treat Glioblastoma	Provisional	United States	Filed	62/190,604
07/21/15	150708-245	Methods and Kits to Identify Klebsiella Strains	Provisional	United States	Filed	62/195,206
07/23/15	091113-127 PTTG1	Methods And Kits Used In Classifying Adrenocortical Carcinoma	Continuation	United States	Filed	14/807,561
07/29/15	121012-187	Mobile Phase Degassing For Nano Flow Liquid Chromatography	Nationalized PCT	Europe	Filed	14757447.9
08/06/15	140611-227	Methods and Kits to Identify and Genotype Cryptococcus Species	Utility	United States	Filed	14/819,529
08/10/15	121012-187	Mobile Phase Degassing For Nano Flow Liquid Chromatography	Nationalized PCT	United States	Filed	14/766,976
08/26/15	140522-225	Data Processing System to Illustrate Operational Status of a Monitored System	Utility	United States	Filed	14/836,125
09/03/15	150714-246	"Small Molecule Inhibitors of Dyrk1A and Uses Thereof				
UofA ref: 14-059"	Provisional	United States	Filed - Prosecution by Other Party	62/213,904		
09/08/15	140521-224	Biomarkers and Methods of Diagnosing and Prognosing Mild Traumatic Brain Injuries	Provisional	United States	Filed	62/215,381
09/09/15	130130-189 antiFGFR4	Hybridoma Clones and Monoclonal Antibodies to Fibroblast Growth Factor 4	Nationalized PCT	United States	Filed	14/774,083

Issue Date	Tech Id	Title	App Type	Country	Status	Serial No.
09/10/15	150316-235	Detecting Metastatic Cancer with Epigenomic Biomarkers Using Non-Invasive Methodologies	Provisional	United States	Filed	62/216,477
09/14/15	121214-188 ERRFI1	Targeted Therapies for Cancer	Nationalized PCT	United States	Filed	14/776,552
09/14/15	130314-196 FGGY	Methods for the Diagnosis of Amyotrophic Lateral Sclerosis	Nationalized PCT	United States	Filed	14/776,347
09/14/15	130315-198 CD9	Hybridoma Clones and Monoclonal Antibodies to CD9	Nationalized PCT	United States	Filed	14/776,420
09/14/15	130305-194 TSPAN8	Hybridoma Clones and Monoclonal Antibodies to Tetra Spanin 8	Nationalized PCT	United States	Filed	14/776,475
09/15/15	150914-247	Methods for Detecting and Treating Fungal Infections	Provisional	United States	Filed	62/218,711
09/25/15	150925-248	Alterations in the Cell Cycle Checkpoint Pathway in Breast Cancer	Provisional	United States	Filed	62/233,140
10/23/15	130402-200 ACC	Methods for the Treatment of Cancer	Continuation	United States	Filed	14/921,008
11/2/15	090113-092 INPP5A	Identification and Treatment of Cancer Subsets	Continuation	United States	Filed	14/929,619
11/4/15	150702-244	Next-Gen Antimicrobial Resistance Detection (N-GARD) from Patient Specimens	Provisional	United States	Filed	62/250,565
11/10/15	111104-169 CD63	Hybridoma Clones, Monoclonal Antibodies, and Methods of Use	Nationalized PCT	United States	Filed	14/890,317
11/12/15	140513-223	Genetic Signature of Vulnerability to Inhibitors of Base Excision Repair (BER) in Cancer	Nationalized PCT	United States	Prosecution by Other Party	14/890,685
11/17/15	130411-202 BMP	A Genetic Test to Predict Patient Response to Bone Morphogenetic Protein in Arthrodesis	Nationalized PCT	United States	Filed	14/891,693
11/19/15	110509-156 Autophagy	Autophagy Inhibitors	Divisional	United States	Prosecution by Other Party	14/946,337
11/24/15	140826-228	Compositions and Methods for the Treatment of Fungal Infections	Utility	United States	Filed	14/949,965
11/25/15	150608-242 (Weel)	Systems and Methods for Treating Cancer	PCT	PCT	Prosecution by Other Party	PCT/ US2015/062785
12/21/15	140513-223	Genetic Signature of Vulnerability to Inhibitors of Base Excision Repair (BER) in Cancer	Nationalized PCT	Canada	Filed	2912786

* Pending further review or issuance

Peer-Reviewed Laboratory Research Publications and Presentations

In 2015, TGen researchers published their research results extensively in numerous scholarly peer-reviewed academic journals and through presentations at leading national and international conferences. The following highlighted list reflects publications and presentations resulting from projects funded by external sponsors, but supported by underlying technology provided for by State of Arizona funding via the $3M per year in general funds appropriation as distributed by Northern Arizona University, as well as the $2M per year in tobacco tax funding received from the Arizona Department of Health Services.

Since day one, the focus of our translational research has constantly remained the patient; those individuals with cancer, Alzheimer's and other neurological disorders, and a host of rare diseases that all too often go mis- or undiagnosed. While many institutes and healthcare networks have taken up the charge of late, we at TGen have pushed the boundaries of this space for the past half-decade, though we prefer the term "precision" rather than "personalized" medicine.

Much of what we learn is published in leading scientific and medical journals, which increases the knowledge base of all those in the biomedical research and medical space.

In 2015, TGen researchers published their research results extensively in numerous scholarly peer-reviewed academic journals and through presentations at leading national and international conferences. These include publication in leading scientific journals such as *Science Advances, Proceeding of the National Academy of Sciences, USA, Cell, Nature Communications, Molecular Cancer Therapeutics, Nero Oncology, PLos One, Genome Research, Journal of the American Medical Association, Neurology*, and a host of other disease-associated publications.

Our annual Scientific Retreat in October brought together nearly 240 registrants including TGen faculty, staff and students, 45 collaborators, and nine sponsoring vendors. TGen scientists presented over 60 scientific posters, eight unique breakout panels and four competitively selected "hot topics" presentations. The purpose of the event was to summarize the Institute's scientific year and create an environment in which new professional relationships and collaborations, both internal and external, could develop.

2015 Select Highlights (See Appendix B for complete listing)

In 2015, TGen advanced a series of innovative research initiatives that yielded numerous scientific discoveries (a good number with potential clinical application), established national and international collaborations, and led new and exciting clinical trials with promising results. Notable are:

a. **Desmoplasia in primary tumors and metastatic lesions of pancreatic cancer.** Clifford J Whatcott, Caroline H Diep, Ping Jiang, Aprill Watanabe, Janine LoBello, Chao Sima, Galen Hostetter, H. Michael Shepard, Daniel D. Von Hoff, and Haiyong Han. February 18, 2015.

b. **Review of X-linked syndromes with arthrogryposis or early contractures-aid to diagnosis and pathway identification**. Hunter JM1, Kiefer J, Balak CD, Jooma S, Ahearn ME, Hall JG, Baumbach-Reardon L. *Am J Med Genet A*. 2015 May;167(5):931-73. Epub 2015 Mar 19.

c. **Novel pathogenic variants and genes for myopathies identified by whole exome sequencing.** Hunter JM, Ahearn ME, Balak CD, Liang WS, Kurdoglu A, Corneveaux JJ, Russell M, Huentelman MJ, Craig DW, Carpten JD, Coons SW, DeMello DE, Hall JG, Bernes SN and Baumbach-Reardon L. *Molecular Genetics & Genomic Medicine.* Volume 3, Issue 4, pages 283–301. Article first published online April 8, 2015.

d. **Towards Precision Medicine in Glioblastoma: The Promise and The Challenges.** Michael D. Prados, Sara A. Byron, Nhan L. Tran, Joanna J. Phillips, Annette M. Molinaro, Keith L. Ligon, Patrick Y. Wen, John G. Kuhn, Ingo K. Mellinghoff, John F. de Groot, Howard Colman, Timothy F. Cloughesy, Susan M. Chang, Timothy C. Ryken, Waibhav D. Tembe, Jeffrey A. Kiefer, Michael E. Berens, David W. Craig, John D. Carpten and Jeffrey M. Trent. *Neuro Oncol* (2015) doi: 10.1093/neuonc/nov031 First published online: May 1, 2015.

e. **Staphylococcus aureus and the Ecology of the Nasal Microbiome.** Cindy M. Liu, Lance B. Price, Bruce A. Hungate, Alison G. Abraham, Lisbeth A. Larsen, Kaare Christensen, Marc Stegger, Robert Skov, Paal Skytt Andersen. *Science Advances*. 05 Jun 2015, Vol. 1, no. 5.

f. **Phylogenetically typing bacterial strains from partial SNP genotypes observed from direct sequencing of clinical specimen metagenomic data.** Sahl JW, Schupp JM, Rasko DA, Colman RE, Foster JT, Keim P. *Genome Med.* 2015 Jun 9;7(1):52.

g. **Orchestrating the Tumor Microenvironment to Improve Survival for Patients With Pancreatic Cancer: Normalization, Not Destruction.** Whatcott CJ, Han H, Von Hoff DD. *Cancer J.* 2015 Jul-Aug; 21(4): 299-306.

h. **Pilot Trial of Selecting Molecularly Guided Therapy for Patients with Non-V600 BRAF-Mutant Metastatic Melanoma: Experience of the SU2C/MRA Melanoma Dream Team.** LoRusso PM, Boerner SA, Pilat MJ, Forman KM, Zuccaro CY, Kiefer JA, Liang WS, Hunsberger S, Redman BG, Markovic SN, Sekulic A, Bryce AH, Joseph RW, Cowey CL, Fecher LA, Sosman JA, Chapman PB, Schwartz GK, Craig DW, Carpten JD, Trent JM. *Mol Cancer Ther.* 2015 Aug; 14(8): 1962-71. Epub 2015 Jun 10.

i. **Whole-genome bisulfite sequencing of cell-free DNA identifies signature associated with metastatic breast cancer.** Legendre C, Gooden GC, Johnson, Martinez RA, Liang WS and Salhia B. *Clinical Epigenetics* 2015, 7:100. September 16, 2015.

Presentations

Circulating Biomarkers World Congress 2015

March 23, 2015

Van-Keuren Jensen, Kendall

Session Title: Exosomes and Microvesicles in Various Disease Classes – Cancer, CNS, Cardiovascular Disease

RNA Signatures Associated with Brain Injury and Disease

One of our goals has been to examine the extracellular RNA contents in cell-free biofluids to identify markers of brain injury and disease. We have examined multiple biofluid types from patients with head trauma and neurodegenerative disease. We discuss the utility of each biofluid in reliably reflecting injury and we will discuss common and specific RNAs that are altered by injury and disease.

Winter Conference on Neural Plasticity 2015

February 7-14, 2015

Huentelman, Matthew

Genomic and Proteomic Advances to Expose Memory and Disease Mechanisms

The Winter Conference on Neural Plasticity is concerned with all aspects of neural plasticity: from development to aging, from learning and memory to pathology, from molecular to behavior.

2015 American Association for Cancer Research (AACR) Conference

April 18 - 22, 2015

TGen, Various, see following

The AACR Annual Meeting 2015 was held April 18-22, 2015, in Philadelphia, Pennsylvania. It highlighted the latest, most exciting discoveries in every area of cancer research and provided a unique opportunity for investigators from all over the world to meet, interact, and share their insights. This year's meeting theme – "Bringing Cancer Discoveries to Patients" – underscored the vital and inextricable link between discovery and treatment, and it reinforced the fact that research underpins all the progress we are making in the field toward cancer cures. For everyone – presenters, early-career and established researchers, clinicians, and advocates – the Annual Meeting is a must-attend event and TGen had a significant presence at this year's meeting as noted in the listing on the following pages.

tgen

TGen Participation at the AACR Annual Meeting 2015

AACR American Association for Cancer Research

DATE & TIME	SESSION TYPE	LOCATION	SESSION TITLE	PRESENTATION TITLE/ROLE	AUTHOR
SAT, APRIL 18					
SUN, APRIL 19					
1:00 PM - 5:00 PM	Poster Session	Section 22	Phase II, III, and Special Population Clinical Trials	Implementation of CLIA enabled integrated whole genome (WGS)/exome (WES)/transcriptome (RNAseq) next-gen sequencing to identify therapeutically relevant targets in advanced cancer patients	Milesh J. Borad, Jan Egan† Mia Champion†, Katherine Hunt, Robert McWilliams, Ann McCullough, **Jessica Aldrich, Sara Nasser, Winnie Liang, Michael Barrett, David Craig, Ramesh Ramanathan, John Carpten**, A. Keith Stewart, Alan Bryce.
1:00 PM - 5:00 PM	Poster Session	Section 26	Tumor- and Blood-based Genotyping	Identification of clinically actionable genomic alterations in the tumor and circulation of pancreatic cancer patients	Mark Sausen, Jillian Phallen, Vilmos Adleff, Siân Jones†, Rebecca J. Leary, Karli Lytle, Sonya Parpart-Li†, Derek Murphy, **Michael T. Barrett**, David C. Linehan, Anirban Maitra, Ralph Hruban, **Daniel D. Von Hoff**, Julia S. Johansen, Luis A. Diaz, Jr., Jeffrey A. Drebin, Victor E. Velculescu.
1:00 PM - 5:00 PM	Poster Session	Section 21	Signaling Axes Regulating Motility and Invasion	TROY-EGFR signaling complex mediates glioblastoma cells invasion and survival	**Alison Roos, Zachary Mayo**, Jean Kloss, **Serdar Tuncali, Harshil Dhruv, Michael E. Berens**, Joseph C. Loftus, **Nhan L. Tran.**
1:00 PM - 5:00 PM	Poster Session	Section 9	New Insights from Imaging and Cell Isolation	Evaluating high risk BI-RADS 4 mammographic lesions: a pilot trial of textural analysis (TA) as a supplement to digital mammography (DM)	Melissa R. Gordon, **Erkut Borazanci**, Daniel D. Maki, Ron L. Korn.
1:00 PM - 5:00 PM	Late-Breaking Poster Session	Section 39	Late-Breaking Research: Experimental and Molecular Therapeutics 1	High complete and partial response rate in a phase Ib pilot trial with cisplatin plus albumin-bound paclitaxel and gemcitabine in patients with advanced pancreatic cancer	Gayle S. Jameson, Erkut Borazanci, Elizabeth Poplin, Michael T. Barrett, John Crowley, Adam Rosenthal, Amy Stoll-D'Astice, Karen L. Ansaldo, Steven Boone, Leticia Lebron, **Ramesh K. Ramanathan**, Ronald L. Korn, **Daniel D. Von Hoff.**
MON, APRIL 20					
8:00 AM -12:00 PM	Poster Session	Section 19	Solid Tumor Stem Cells	Multiethnic triple negative breast cancer comparisons of gene expression shows enrichment of distinct patnways in ALDH1+ subpopulations compared to CD44+/CD24-/EpCAM+	Evelyn M. Jiagge, Qingxuan Song, **Shukmei Wong**, Tahra Luther, Michele Dziubinski, Shawn Clouthier, Sean McDermott, Lisa Newman, **John Carpten**, Jun Li, Max Wicha, Sofia Merajver.
8:00 AM -12:00 PM	Poster Session	Section 30	In Vitro and In Vivo Models and New Targets	Whole exome sequencing of pre and post treatment diffuse large B cell lymphoma reveals the mutation spectrum of the relapse/refractory patient population	Danielle Greenawalt, Kate Byth, Zhongwu Lai†, Justin Johnson, Ambar Ahmed, Brian Dougherty, Kenneth Thress, Michael Zinda, **Winnie S. Liang, John Carpten**, Stephen Fawell, J. Carl Barrett.
8:00 AM -12:00 PM	Poster Session	Section 25	Clinical Trials in Progress	Phase 1 dose escalation and pharmokinetic study of 14-O-phosphonooxymethyltriptolide	Edward Greeno, Erkut Borazanci, Jon Gockerman, Ronald Korn, Ashok Saluja, **Daniel Von Hoff.**
8:00 AM -12:00 PM	Poster Session	Section 17	Human-in-Mouse Models of Cancer 1	Characterization of patient-derived xenograft (PDX) models to evaluate clinical and therapeutic responses of glioblastoma multiforme	Dioval A. Remonde, Brett L. Carlson, Mark A. Schroeder, **Brock Armstrong, Sen Peng, Lisa Evers**, Paul A. Decker, Jeanette Eckel Passow, **Michael E. Berens, Nhan L. Tran**, Robert B. Jenkins, Jann N. Sarkaria.
8:00 AM -12:00 PM	Poster Session	Section 4	Examination of Cancer Pathways Using Computational Approaches	*In silico* mapping of oncogene networks implicate the WNT pathway in the glioblastoma MES subtype	Anna M. Joy, Ivan Smirnov, Mark Reiser, **Seungchan Kim**, Burt Feuerstein.
8:15 AM -10:15 AM	Mentoring Session	Regency Ballroom AB of the Loews Hotel	Women in Cancer Research (WICR) Career Mentoring Session	Mentor	**Lisa L. Baumbach-Reardon**
1:00 PM - 5:00 PM	Poster Session	Section 21	Circulating Free DNA 1	Quality assessment of circulating cell-free DNA using multiplexed droplet-digital PCR	**Tania Contente-Cuomo, Muhammed Murtaza.**
1:00 PM - 5:00 PM	Poster Session	Section 21	Circulating Free DNA 1	Circulating tumor DNA (ctDNA) analysis of PIK3CA and AKT1 mutations in patients enrolled onto the Phase 1b study of the PI3K inhibitor taselisib (GDC-0032) in solid malignancies	Timothy R. Wilson, Heidi Savage, Junko Aimi, Jessica Jin, Hema Parmar, Jerry Hsu, Ian Krop, Cristina Saura, Andres Cervantes, Jasgit Sachdev, Manish Patel, Juan Cejalvo, Mafalda Oliveira, Eric Winer, **Daniel Von Hoff.** Jose Baselga, Dejan Juric.
1:00 PM - 5:00 PM	Poster Session	Section 18	Extrinsic Modulators of Motility and Invasion	Investigating the role of Fn14 in EGFRvIII-driven glioblastoma	**Alison Roos, Zachary Mayo, Michael Pineda**, Jeffery A. Winkles, **Michael E. Berens, Nhan L. Tran.**
3:00 PM - 5:00 PM	Special Session	Room 120, Pennsylvania Convention Center	SU2C Scientific Session: Genomics and Beyond-Bringing Personalized Medicine to Cancer Therapy	Stand Up To Cancer (SU2C) is working with funding partners to support these presenting Dream Teams and Translational Team with a focus on in-depth genomic and molecular tumor analysis to personalize treatment and understand treatment resistance in individual patients. In this open session, which is available to all attendees, Team members will discuss their projects and describe their current and future work translating personalized medicine approaches to the clinic. A brief Q & A will follo the presentation of the Dream Team and Team reports.	Phillip A. Sharp, René Bernards, **Aleksandar Sekulic**, Joshua M. Stuart, Hans Clevers.

tgen

TGen Participation at the AACR Annual Meeting 2015

AACR American Association for Cancer Research

DATE & TIME	SESSION TYPE	LOCATION	SESSION TITLE	PRESENTATION TITLE/ROLE	AUTHOR
MON, APRIL 20					
7:00 PM - 8:25 PM	Professional Advancement Session	Regency Ballroom (Second Floor), Loews Philadelphia Hotel	MICR Professional Advancement Reception and Roundtable Navigating the Road to a Successful Career in Cancer Research	Survival Skills: Junior Faculty	**Lisa L. Baumbach-Reardon**
TUES, APRIL 21					
8:00 AM -12:00 PM	Poster Session	Section 19	Radiation Biology 2: Modifiers and Signal Transduction, Sensitivity, Resistance, and Therapy	Pharmacological inhibition of MRK/ZAK kinase for the treatment of medulloblastoma	Rosamaria Ruggieri, Daniel Markowitz, Caitlin Powell, **Nhan Tran**, Magimairajanissai Vanan, Mingzu He, Yousef Al-Abed, Marc Symons.
8:00 AM -12:00 PM	Poster Session	Section 39	Late-breaking poster session	Identification of mutations in histone modification genes in Hodgkin lymphoma	**Liang WS, Salhia B**, Helland A, Sekar S, Garrido-Laguna I, Fanale MA, Oki Y, Westin JR, Davis RE, Meric-Bernstam F, Janku F
8:00 AM -12:00 PM	Poster Session	Section 4	Genomics 1	Comprehensive Pan-Genomic characterization of adrenocortical carcinoma	Siyuan Zheng, Andrew D. Cherniack, Ninad Dewal, Richard A. Moffitt, Ludmila Danilova, Bradley A. Murray, Antonio M. Lerario, Tobias Else, Theo A. Knijnenburg, Giovanni Ciriello, **Seungchan Kim**, Guillaume Assie, Olena Morozova, Rehan Akbani, Juliann Shih, Katherine A. Hoadley, Toni K. Choueiri, Jens Waldmann, Ozgur Mete, Gordon A. Robertson, Matthew Meyerson, **Michael J. Demeure**, Felix Beuschlein, Anthony Gill, Ana C. Latronico, Maria C. Fragoso, Leslie Cope, Electron Kebebew, Mouhammed A. Habra, **Timothy G. Whitsett, Kimberly J. Bussey**, William E. Rainey, Sylvia Asa, Jérôme Bertherat, Martin Fassnacht, David A. Wheeler, The Cancer Genome Atlas Research Network, Gary D. Hammer, Thomas J. Giordano, Roel Verhaak.
10:30 AM - 12:40 PM	Clinical Trials Plenary Session	Room 120, Pennsylvania Convention Center	Clinical Trials Using PARP Inhibitors	Combination of the PARP inhibitor veliparib (ABT888) with irinotecan in patients with triple negative breast cancer: Preliminary activity and signature of response	Patricia M. LoRusso, Sara M. Tolaney, **Shukmei Wong**, Ralph E. Parchment, Robert J. Kinders, Lihua Wang, **Jessica Aldrich**, Alice Chen, Diane Dureckil Scott A. Boerner, Tina Guthrie, Adam Bowditch, Lance K. Heilbrun, Mary Jo Pilat, **David Craig**, Dongpo Cai, Tracy Bell, **John Carpten**, Geoffrey Shapiro.
1:00 PM - 5:00 PM	Poster Session	Section 4	Epigenetic Changes in Cancer I	Whole genome bisulfite sequencing from plasma of patients with metastatic breast cancer identifies putative biomarkers	**Christophe Legendre, Gerald C. Gooden, Kyle N. Johnson, Rae Anne Martinez, Bodour Salhia.**
1:00 PM - 5:00 PM	Poster Session	Section 5	Genomic Instability in Cancer Development and Treatment	Prevalent loss of BRCA1 and BRCA2 expression in African TNBC suggests their prominent role in sporadic carcinogenesis	Evelyn M. Jiagge, **Shukmei Wong**, Gabriel Lupu, Mu Qiao, Michele Dziubinski, Lisa A. Newman, **John Carpten**, Max Wicha, Sofia D. Merajver.
1:00 PM - 5:00 PM	Poster Session	Section 18	Extrinsic Modulators of Motility and Invasion	Investigating the role of Fn14 in EGFRvIII-driven glioblastoma	**Alison Roos, Zachary Mayo, Michael Pineda**, Jeffery A. Winkles, **Michael E. Berens, Nhan L. Tran.**
3:00 PM - 5:00 PM	Minisymposium	Terrace Ballroom IV (400 Level), Pennsylvania Convention Center	Precision Medicine in the Clinic	Identification of novel drugs for glioblastoma using chemical biology fingerprinting	Darren Finlay, **Harshil Dhruv, Lisa Evers, Sen Peng, Jeff Kiefer, Seungchan Kim**, Jeffrey Raizer, **Michael Berens.**
WED, APRIL 22					
8:00 AM -12:00 PM	Poster Session	Section 17	Other Animal Species and Cell Models of Cancer	Changes in mitochondrial background affect nuclear DNA methylation	Carolyn J. Vivian, Amanda E. Brinker, **Gerald C. Gooden, Christophe Legendre, Bodour Salhia**, Danny R. Welch.
8:00 AM -12:00 PM	Poster Session	Section 28	Drug Discovery	Propentofylline inhibits TROY/TNFRSF19 signaling to enhance therapeutic efficacy in invasive glioblastoma cells	**Harshil D. Dhruv, Serdar Tuncali, Alison Roos, Patrick Tomboc, Nathan Jameson, Ashley Chavez**, Joseph Loftus, **Michael E. Berens, Nhan L. Tran.**
8:00 AM -12:00 PM	Poster Session	Section 4	Identification of Molecular Markers	Single cell multiplex gene expression analysis to unravel heterogeneity of PDX samples established from tumors of breast cancer patients with different ethnicity	Ebrahim Azizi, Evelyn M. Jiagge, Shamileh Fouladdel, **Shukmei Wong**, Michele L. Dziubinski, Mary Sehl, Anahita Kyani, Jun Li, Hui Jiang, Tahra K. Luther, Shawn G. Clouthier, Sean P. McDermott, **John Carpten**, Lisa A. Newman, Sofia D. Merajver, Max S. Wicha.
8:00 AM -12:00 PM	Poster Session	Section 36	Drug Delivery	Pharmacokinetics of BIND-014 (docetaxel nanoparticles for injectable suspension) in preclinical species and patients with advanced solid tumors	Jason Summa, **Daniel Von Hoff, Jasgit Sachdev**, Monica Mita, Patricia LoRusso, Peter Eisenberg, Howard Burris, Lowell Hart, Hagop Youssoufian, Donald Parsons, Susan Low.
8:00 AM -12:00 PM	Poster Session	Section 23	Genomics in the Clinic 2	Prognosis of baseline absolute lymphocyte count (ALC) and neutrophil to lymphocyte ratio (NLR) in patients with pancreatic adenocarcinoma	Karlik Anand, **Erkut Borazanci**, Sachin Pai, Runhua Shi, Syed H. Jafri, Glenn Mills.
8:00 AM -12:00 PM	Poster Session	Section 29	Histone Deacetylase Inhibitors, Methyltransferase Inhibitors, and Other Targets	Therapeutic potential of HDAC inhibitors in small cell carcinoma of the ovary, hypercalcemic type (SCCOHT)	Yemin Wang, **Pilar Ramos**, Anthony N. Karnezis, **Jeffrey M. Trent**, David G. Huntsman.

2015 American Society for Microbiology

May 30 – June 2, 2015, New Orleans, LA

E. R. G. Lewis, A. Doyle, B. M. Barker.
641a. Early Host Innate Immune Response in a Murine Model of Pulmonary Coccidioidomycosis

E. P. Price, D. S. Sarovich, E. Smith, B. MacHunter, P. Keim, G. Harrington, V. Theobald, E. McRobb, Y. Podin, M. Mayo, M. Kaestli, B. J. Currie. **388. Melioidosis Cases in Northern Australia Associated with a Burkholderia pseudomallei Clone of Asian Origin**

J. Yi, K. Hernandez, L. M. Pristo, J. K. Stone, E. W. Settles, H. Hornstra, J. D. Busch, C. Soffler, R. A. Bowen, B. J. Currie, A. Tuanyok, P. Keim. **1806. Characterization of the Humoral Immune Response to a Caprine Aerosol Infection Model of Melioidosis**

D. S. Sarovich, E. P. Price, M. Mayo, P. S. Keim, B. J. Currie. **1453. Microbial Genome-Wide Association Study Identifies a Mechanism for Hypervirulence in Burkholderia pseudomallei**

D. N. Birdsell, Y. Özsürekci, A. Rawat, C. L. Mitchell, A. E. Aycan, V. Gurbuz, M. Ceyhan, J. Sahl, A. Johansson, J. Schupp, R. E. Colman, P. S. Keim, D. M. Wagner. **2399. Metagenomics Analysis of Cervical Lymph Nodes from Tularemia Patients Identified Underlying Co-infections that was Missed During Medical Examination**

Individualizing Medicine Conference 2015

September, 2015, Rochester, MN

Huentelman, Matthew

Living on the Edge: The Search for an Understanding of Dementia in Phenotypic Outliers

2015 Society for Neuroscience (SfN)

October 17-21, Chicago, IL

M. Turk, A. Siniard, M. Deboth, T. Wang, T. Dunckley, P. Pirrotte, S. Oddo, M. Huentelman. 106.08 - **ROCK inhibitors for modulation of tau phosphorylation: An opportunity to target Alzheimer's disease pathology and enhance memory**

M. K. Chawla, D. T. Gray, M. J. Huentelman, C. A. Barnes; 179.02/AA45 - **Is Arc mRNA expression regulated by the threshold for dendritic Ca++ plateau potentials generated from integration of entorhinal cortical inputs to granule cells?**

A. Wolfe A. Siniard R. Richholt I. Schrauwen, M. Huentelman; 182.11/BB71 - Dried blood spot RNA sequencing (DBS-RNA-Seq): **A novel approach for the identification of circulating biomarkers**

R. Richholt, A. Yeri, R. Mccoy, M. Anastasi, A. Allen, S. Althoff, A. Siniard, M. Deboth, I. Malenica, T. Beecroft, E. Carlson, L. Ghaffari, S. Allen, M. Shahbauder, K. Ryden, R. Bruhns, A. Janss, D. Vooletich, T. Ide, D. Arment, D. Leonard, J. Chu, A. Buck, T. Mcleod, J. Cardenas, R. Greenwald, T. Lee, J. Trent, K. Van Keuren-Jensen, M. Huentelman; 225.12/G44 - **Extracellular RNA sequencing to identify RNA biomarkers of head impact in college athletes**

S. M. Neuner, M. De Both, B. Garfinkel, J. Ingels, L. Lu, L. Wilmott, T. Shapaker, R. Williams, G. Kempermann, J. Orly, M. Huentelman, C. Kaczorowski; 377.06 - **Systems genetics of 'normal' aging identifies novel candidates misregulated in Alzheimer's disease**

M. J. Huentelman, I. Schrauwen, A. Siniard, R. Richholt, J. Corneveaux, E. Glisky, L. Ryan, M. De Both; 470.04 - **MindCrowd: Web-based paired associates learning and reaction time testing demonstrates significant main effects of age, gender, education, and familial history of Alzheimer's disease on performance**

M. J. Huentelman, I. Schrauwen, J. J. Corneveaux, K. M. Ramsey, *A. L. Siniard; 648.10 - **Nuclear family sequencing in Multiple System Atrophy identifies novel genes associated with disease.**

American Society of Human Genetics (ASHG) 2015

October 6-10, Baltimore, MD

E D. W. Craig; S. Szelinger; A. M. Claasen; I. Schrauwen; R. F. Richholt; M. De Both; B. E. Hjelm; S. Rangasamy; A. L. Siniard; A. L. Courtright; M. J. Huentelman; V. Narayanan. **PgmNr 12: Improved identification of the genetic basis of disease by integrated analysis of RNA-seq together with whole-genome and exome-based sequencing data.**

A. Henderson-Smith; J. Corneveaux; L. Cuyugan; M. Huentelman; W. Liang; T. Beach ; T. Dunckley. **PgmNr 1058: Next-generation profiling to identify the molecular etiology of Parkinson's dementia.**

M. De Both; A. Siniard; R. Richholt; K. Ramsey; MJ. Huentelman. **PgmNr 1150: Novel ABCC1 variant associated with frontotemporal dementia.**

A. Siniard; I. Schrauwen; J. Corneveaux; K. Ramsey; M. Huentelman. **PgmNr 1152: Exome sequencing identifies novel genes associated with Multiple System Atrophy.**

R. Richholt; A. Yeri; R. Mccoy; M. Anastasi; S. Althoff; A. Allen; A. Siniard; M. DeBoth; I. Malenica; T. Beecroft; E. Carlson; L. Ghaffari; S. Allen; M. Shahbauder; K. Ryden; R. Bruhns; A. Janss; D. Vooletich; T. Ide; D. Arment; D. Leonard; J. Chu; A. Buck; T. Mcleod; J. Cardenas; R. Greenwald; T. Lee; J. Trent; K. Van Keuren-Jensen; M. Huentelman. **PgmNr 1219: Extracellular RNA sequencing to identify RNA biomarkers of head impact in college athletes.**

A. M. Claasen; K. M. Ramsey; N. Belnap; S. Szelinger; A. L. Siniard; I. Schrauwen; J. J. Corneveaux; B. E. Hjelm; A. L. Courtwright; R. F. Richholt; M. De Both; S. Rangasamy; M. J. Huentelman; D. W. Craig; V. Narayanan. **PgmNr 1976: An integrated approach to genetic diagnosis: Genomic research and clinical care at the TGen Center for Rare Childhood Disorders.**

A. Wolfe; A. Siniard; I. Schrauwen; M. De Both; R. Richholt; M. Huentelman. **PgmNr 2026: Dried blood spot RNA sequencing (DBS-RNA-Seq): A novel approach for the identification of circulating biomarkers.**

J. You; N. Sobreira; D. Grange; D. Gable; J. Jurgens; N. Belnap; A. Shiniard; M. Huentelman; I. Schrauwen; R. Richholt; S. Vallee; M. Palko; D. Valle; M. Armanios; J. Hoover-Fong. **PgmNr 2839: A Newly Recognized Intellectual Disability Disorder Caused by Variants in TELO2, a gene encoding a component of the TTT complex.**

I. Schrauwen; S. Szelinger; A. L. Siniard; J. J. Corneveaux; A. M. Claasen; R. F. Richholt; M. De Both; B. Hjelm; S. Rangasamy; N. Kulkarni; S. Bernes; J. Buchhalter; M. Russell; A. L. Courtright; K. Ramsey; D. W. Craig; V. Narayanan; M. Huentelman. **PgmNr 286: Exome sequencing suggests Aicardi Syndrome is genetically heterogeneous and not exclusive to females.**

J. M. Hunter; C. Balak; M. E. Ahearn; W. Liang; M. Russell; M. Huentelman; D. Craig; J. Carpten; S. M. Bernes; L. Baumbach-Reardon. **PgmNr 2885: Identification of New Genes and Pathways for Rare Infantile Forms of Myopathies and Neuromuscular Disorders.**

S. Rangasamy; K. M. Ramsey; S. Szelinger; N. Belnap; A. Claasen; A. L. Siniard; AA. Kurdoglu; A. L. Courtwright; R. F. Richholt; M. De Both; JJ. Corneveaux; I. Schrauwen; M. J. Huentelman; D. W. Craig; V. Narayanan. **PgmNr 3009: Whole exome sequencing of family trios identifies novel genes in children with Rett syndrome (RTT) phenotype.**

W. P. D. Hendrick; P. Ramos; H. Yin; A. N. Karnezis; Y. Wang; M. L. Russell; D. W. Craig; V. L. Zismann; A. Sekulic; B. E. Weissman; D. G. Huntsman; J. M. Trent. **PgmNr 89: Germline and somatic inactivating SMARCA4 mutations in small cell carcinoma of the ovary, hypercalcemic type (SCCOHT): Diagnostic and therapeutic implications.**

J. Getz; D. Teoh; S. Nasser; C. Legendre; W. Tembe; V. Yellapantula; M. E. Ahearn; C. Gomez; M. Jorda; S. M. Wong; M. Pegram; J. Carpten; L. Baumbach-Reardon. **PgmNr 2653: Caveolin-1: A Potential Biomarker of Aggressive Triple-Negative Breast Cancer in African American Women.**

J. Choi; M. Makowski; T. Zhang; M. Law; C. Sutherland; W. Kim; M. Kovacs; H. Parikh; L. Aoude; M. Gartside; J. Trent; L. Hurley; M. Vermeulen; S. Macgregor; N. Hayward; M. Xu; K. Brown. **PgmNr 2637: An intronic indel variant confers melanoma risk through PARP1 expression regulation.**

J. A. Sabourin; C. D. Cropp; Y. Kim; L. C. Brody; J. E. Bailey-Wilson; A. F. Wilson. **PgmNr 1329: The use of Complimentary Pairs Stability Selection as an approximation to analysis with replication data.**

AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics

November 5-9, 2015

Murtaza, Muhammed

Analysis of circulating tumor DNA to monitor clonal evolution

The Winter Conference on Neural Plasticlty is concerned with all aspects of neural plasticity: from development to aging, from learning and memory to pathology, from molecular to behavior.

Full-time positions filled (new and replacements) included:

In 2015, 21 new full-time equivalent positions were created with salaries and benefits totaling $1,205,184. Salaries for temporary positions (those positions created for a finite period of time) totaled $99,120, which includes temporary TGen staff and temporary service fees. Student salaries were just over $460,000, bringing the overall 2015 total to $1,665,184.

In terms of education level, eighty-six percent of full-time TGen staff holds a college degree and fifty percent holds an advanced degree.

2015 full-time positions filled (new and replacements) included:

- Associate Bioinformatician
- Assistant Professor
- Bioinformatician
- Clinical Research Coordinator
- Financial Analyst II
- Manager, Contracts
- Technician, Facilities
- Post-Doc Fellow
- Research Assistant Professor
- Research Associate
- Research Associate II
- Research Technician
- Sr. Grants Administrator
- Sr. Staff Scientist
- Sr. Vice President, Emerging Opportunities

Appendix A

Appendix A - 2015 Grant Submissions

PI	Type	Sub/Prime	Sponsor	Title	Date Submitted
Pirrotte, Patrick	U01	Sub GMU	NIH	Nanotrap discovery of previously invisible low abundance cancer biomarkers	01/20/15
Craig, David	P01	Sub/Wayne State	NIH	Race-based gene signatures of clinical significance in prostate cancer	01/25/15
Carpten, John	P01	sub/USC	NIH	Predictors of Aggressive Prostate Cancer	01/26/15
Baumbach, Lisa	G01	Prime	MDA	Translating Novel Molecular Discoveries into Lead Compounds for NMD Treatment	01/30/15
Dunckley, Travis	R01	Prime	NIH	DNA Methylation as a Molecular Risk Assessment Tool for Parkinson's Disease	02/05/15
Salhia, Bodour	R01	Prime	NIH	Circulating DNA methylation biomarkers in micrometastatic breast cancer	02/05/15
Murtaza, Muhammed	R01	Prime	NIH	Circulating tumor DNA analysis as a personalized biomarker for metastatic melanoma	02/05/15
DiStefano, Johanna	R01	Prime	NIH	Epigenetic markers of severity in nonalcoholic fatty liver disease	02/05/15
Trent, Jeffrey	G01	Prime	Science Foundation Arizona	Tgen 2015 Bisgrove Scholars: The Future of Translational Research	02/12/15
Schrauwen, Isabelle	G01	Prime	AARC	TREM2 agonism: a new approach for Alzheimer's disease therapy	02/13/15
Huentelman, Matthew	R21	Prime	NIH	Identification of TREM2 agonists as a therapeutic avenue for Alzheimers disease	02/19/15
Engelthaler, David	R21	Sub NAU	NIH	The Antimicrobial Resistance Omics of Acinetobacter baumannii	02/19/15
Huentelman, Matthew	G01	Sub/ UofMiami	NIH	StemBrain: Generation of iPSC lines with autopsy confirmed profiles as a rapid model system for neurologic disease	02/19/15
Jensen, Kendall	R21	Sub/ STJHMC	NIH	RNA-based Biomarker Analysis of Acute Spinal Cord Injury	02/19/15
Jensen, Kendall	R21	Sub STJHMC	NIH	Extracellular RNAs a Biomakers of Cerebal Ischemia	02/19/15
Schrauwen, Isabelle	G01	Prime	BBR	Genetics of cognitive and processing changes in young adults at elevated risk for developing Alzheimer's Disease	02/24/15
Craig, David	U01	Prime/Sub collatoration	NIH	3/4-Somatic genome variation and its functional impact in schizophrenia neurons	02/24/15
Berens, Michael	R21	Prime	NIH	Vulnerability and Resistance of Glioblastoma to inhibition of Wee1	02/27/15
Von Hoff, Daniel	R21	Prime	NIH/NCI	Optimizing the clinical lead Minnelide by understanding its effect on pancreatic cancer associated stellate cells	02/27/15
Dunckley, Travis	G01	Prime	MJFF	Independent Data Analysis of Complementary Parkinson's Disease Methylation Profiling Data Sets	03/01/15
Von Hoff, Daniel	G01	Prime	NFCR	NFCR Center for New Cancer Therapy	03/02/15
Engelthaler, David	R01	Prime	NIH	Functional genomics of emerging Cryptococcus gattii genotypes in N. America	03/05/15
Whitsett, Timothy	R01	Sub to UMB	NIH	Modulation of IFN action via novel regulatory factors	03/05/15
Craig, David	U01	sub UCSD	NIH	The Bipolar Genome Study	03/05/15
Pirrotte, Patrick	G01	Sub to BNI	ALS Foundation	Function of Martin 3 in motor neurons and ALS	03/06/15
Jensen, Kendall	G01	Prime	ALS Foundation	Assessment of extracellular vesicle contents in patients with ALS	03/06/15
Dunckley, Travis	G01	Prime	ADDF	Testing of selective DYRK1A inhibitors as a novel treatment for AD	03/10/15
Huentelman, Matthew	R01 supplement	Prime	NIH	CATT: Development and Application of a Neuronal Cell activity - tagging toolbox (supplement)	03/12/15
Yin, Holly	R21	Sub to BNI	NIH	High-Throughput 3 4 5 Nicotinic Receptor Assay for Non-Nicotine Tobacco Components	03/16/15
Trent, Jeffrey	U01	Prime	NIH/NCI	Targeting epigenetic dysregulation in SCCOHT: Advancing therapeutic and immunologic implications of genomic information	03/20/15
Lewis, Eric	F32	Prime	NIH	Identify and characterize mechanisms of genetic recombination in Coccidioides	4/8/15
Berens, Michael	G01	Sub to SBMRI	St. Baldrick's Foundation	A Consortium to Optimize Medulloblastoma Therapy (COMET)	4/3/15
Murtaza, Muhammed	G01	Prime	V Foundation	Analysis of circulating tumor DNA to guide non-operative management of rectal cancer	4/8/15
Roos, Alison	F32	Prime	NIH	Targeting the novel EGFR-TROY signalsome in Glioblastoma	4/8/15
Cropp, Cheryl	G01	Prime	V Foundation	Identification of Genetic alterations Associated with Appendiced Cancer as a Guide to Improved Diagnosis and Targeted	4/8/15
DiStefano, Johanna	R01	Sub Temple University	NIH	FXR-mediated molecular and cellular mechanisms underlying bariatric surgery	4/16/15
Salhia, Bodour	G01	Prime	DoD	Towards reducing mortality through predictin, prevention and better treatments for metastic breast cancer	4/22/15

PI	Type	Sub/Prime	Sponsor	Title	Date Submitted
Dunckley, Travis	G01	Sub/UCSD	MJFF	Identification of epigenetic signatures in blood as biomarkers for parkinson's disease	04/30/15
Huentelman, Matthew	G01	Sub/Banner	Alz Association	Longitudinal circulatin RNA biomarker profiling in Down syndrome	05/01/15
Jensen, Kendall	G01	Prime	ALS Foundation	Examination of FGGY's role in ALS and in response to acute nerve in nerve injury	03/06/15
Jensen, Kendall	UH2 Supplement	Prime	NIH	exRNA signatures Predict Oucomes after brain injury Supplement 2	05/03/15
Huentelman, Matthew	G01	Prime	AARC	TGen AARC FY16	05/22/15
Cropp, Cheryl	G01	Prime	Prostate Cancer Foundation	Leveraging Family Structure for the Analysis of Rare Variants in Known Cancer Genes of African American heredilatry and Sporadic Prostate Cancer	06/03/15
Barker, Bridget	R01	Prime	NIH	Understanding the genetic basis of clinically relevant phenotypes in Coccidioides	06/04/15
Narayanan, Vinodh	R01	Prime	NIH	Genetic Modifiers of Phenotyipic Variability in Tuberous Sclerosis Complex	06/05/15
Kim, Seungchan	R01	Prime	NIH	Identification and validation of pathways with condition-specific rewiring of gene dependencies	06/05/15
Berens, Michael	R01	sub to UNC	NIH	Credentialing murine models for glioblastoma preclinical drug development	06/05/15
Whitsett, Tim	R01	Prime	NIH	The role of FN14 in KRAS-driven NSCLC invasion	06/05/15
Dunckley, Travis	R01	sub to UofA	NIH	Development of selective DYRK1A antagonists as therapeutics for Down Syndrome	06/05/15
Huentelman, Matthew	R01	sub to Uof Tennessee	NIH	Systems Genetics of Cognitive Aging and alzheimer's Disease	06/05/15
Keim, Paul	R21	Prime	NIH	Linking Community Reservoirs of Klebsiella pneumoniae to Pathogenic Strains	06/16/15
Engelthaler, Dave	R21	Sub NAU	NIH	Assessing household level exposure to infected peridomestic livestock as risk factors for Leptospirosis	06/16/15
Whisett, Tim	G01	Prime	Damon Runyon Cancer Research Foundation	Assessing therapeutic efficacy of a WEE1 inhibitor and treatment response by liquid biopsy employing in vivo models of KRAS-driven lungs	06/29/15
Huetelman, Matt	R21/R33	sub UMiami	NIH	StemBrain: Generation of iPSC lines with autopsy confirmed profiles as a rapid model system for neurologic disease	06/16/15
Craig, David	G01	sub Veteranns Affair (Phoenix)	Department of Veterans Affairs	Big Data Scientist Training Enhancement Program (BD-STEP)	06/26/15
Jensen, Kendall	G01	sub ASU	PAC-12	Identification of Molecular Changes Associated with Head Impact Exposure in Athletes	07/01/15
Baumbach, Lisa	R01	Prime	NIH	Investigating biological effects of UBA1 pathogenic variants in XL-SMA	07/03/15
Huetelman, Matt	R01	sub UofAZ	NIH	Nrf2 as a regulator of neural stem cell function during aging	07/05/15
Price, Lance	R01	Sub NAU	NIH	MRSA health disparities and transmission patterns among three ethnic groups	07/06/15
Salhia, Boudour	R01	sub KUCC	NIH	PQ5: Mitochondrial-nuclear cross-talk in tumorigenesis and metastasis	07/06/15
Huetelman, Matt	R01	sub BNI	NIH	Dissecting the mechanisms of cognitive deficits in Alzheimer's disease	07/06/15
Tran, Nhan	R01	Prime	NIH	TROY HTS Compound Scrrening	07/17/15
Nicolas-Perez, Maria	F01	Prime	AACR	Validation of LDLR in pancreatic cancer using zebrafish as model organism	07/22/15
Keim, Paul	G01	Prime	Centers for Disease Control	DNA sequencing and bioinformatic analysis of pathogens with imp	07/28/15
Buchholtz, Stephanie	P50	Sub ASU	NIH	Center for Effective Regulation of Human Genomics	07/19/15
Narayan, Vinodh	G01	prime	DoD	Genetic modifiers of pheotype in Tuberous Sclerosis Complex	07/29/15
Turk, Mari	F31	Prime	NIH	Rho kinase inhibition for Alzheimer's prevention and cognitive enhancement	08/10/15
Murtaza, Muhammed	R01	Prime	NIH/NCI	Circulating tumor DNA analysis as a personalized biomarker for metastatic melanoma	08/10/15
Trent, Jeffrey	G01	Prime	DoD	Exploiting novel therapeutic vulnerabilities based on the rold of topoisomerases in SWI/SNF-mutant ovarian cancers	08/12/15
Von Hoff, Daniel	G01	Prime	AACR/SU2C	Reprogramming of Transcriptional Circuitry in Pancreatic cancer	08/24/15
Yin, Holly	G01	Sub to UNC	Wipe Out Kids' Cancer (WOKC)	A new therapeutic opportunity: SNF5 regulation of SWI/SNF complex stability through protein degradation	08/28/15
Rangasamy, Sampath	G01	Prime	Rettsyndrome Foundation	Role of mTOR pathway in the patheogenesis of Rett syndrome	09/11/15
Von Hoff, Daniel	P50	Sub to U of A	NIH/NCI	Reprogramming the Tumor Microenvironment to Improve Survival for Patients with Pancreatic Cancer	09/22/15
Pirrotte, Patrick	R01	sub to SJHMC	NIH	Deciphering LKB1 dependent ATF6 phosphorylation in non-small cell lung cancer	10/05/15
Yin, Holly	R01	sub to SJHMC	NIH	Defining addiction relevant compounds in tobacco smoke	10/05/15
Rangasamy, Sampath	R01	Prime	NIH	Dysregulation of mTOR signaling in the pathogenesis of MeCP2-related disorders	10/05/15

PI	Type	Sub/Prime	Sponsor	Title	Date Submitted
Jensen, Kendall	R01	sub to ASU	NIH	Functions of ERK/MAPK Signaling in GABAergic Circuit Development	10/05/15
Distefano, Johanna	R01	Prime	NIH	Epigenetic markers of severity in nonalcoholic fatty liver disease	10/13/15
Barker, Bridget	DP2	Prime	NIH	From Dogs to Disease: Using Canine Prevalence Data and Genome Wide Associations to Understand Host Susceptibility to Coccidioides Infection	10/15/15
Barker, Bridget	R21	Prime	NIH	"Detection of host and pathogen proteomic signatures in a murine model of coccidioidomycosis"	10/16/15
Jensen, Kendall	R01	sub to SJHMC	NIH	Pathogen proteomic signatures in a murine model of coccidioidomycosis	10/05/15
Trent, Jeff	R01	Prime	NIH	SMARCB1 loss promotes SWI/SNF complex instability and component degradation	10/15/15
Kim, Seungchan	R01	Sub to SJHMC	NIH	Deciphering LKB1 dependent ATF6 phosphorylation in non-small cell lung cancer	10/05/15
Whitsett, Timothy	R01	sub to UMB	NIH	Novel growth regulatory mechanisms induced by Cytokines	10/05/15
Trent, Jeffrey	G01	Sub/OSU	NCF	Targeting heat shock proteins in canine lung cancer: Translating preclinical hypotheses into clinical promise	10/07/15
Matthew Huentelman	R21	Prime	NIH	A longitudinal molecular profiling approach to study relapse-remitting multiple sclerosis using dried blood spots	10/16/15
Bittner, Michael	G01	Prime	W.M. Keck Foundation	Validating the utility of cancer drugs chosen on the basis of the dynamics of cellular system responses to the drugs.	10/28/15
Schrauwen, Isabelle	R03	Prime	NIH	Molecular mechanisms of non-syndromic progressive autosomal dominant hereditary hearing impairment	10/28/15
Huentelman, Matthew	P30	Sub/Banner	NIH	Arizona Alzheimer's Disease Core Center	10/28/15
Schrauwen, Isabelle	G01	Prime	Alzheimers Association	TREM2 agonists as a therapeutic avenue for Alzheimer's disease	10/30/15
Jensen, Kendall	G01	Prime	MJFF	Pre-analytical extracellular vesicle enrishment for increased reliability for alpha-synuclein detection in plasma and CSF	10/30/15
Huentelman, Matthew	R21	Prime	NIH	Identification of Extracellular RNA Biomarkers of Cocaine Use	11/03/15
Han, Haiyong	R21	Sub to U of A	NIH	Chemical probe development and target validation of NEK2 kinase in pancreatic cancer	11/10/15
DiStefano, Johanna	R24	Sub/Wayne State	NIH	The bad and the good": molecules in human skeletal muscle in prediabetes	11/17/15
Craig, Daivd	R01	sub UCSD	NIH	The Bipolar Genome Study	11/23/15
Huentlman, Matthew	R01	sub ASU	NIH	Identifying novel therapeutic targets for Alzheimer's disease using post mortem human brains and animal models	11/25/15
Nhan Tran	U54	sub MIT	NIH	MIT/Mayo Physical Sciences Center for Drug Distribution and Efficacy in Brain tumors	11/25/15
Cropp, Cheryl	Admin Supplement	UNC Sub	NIH	The Role of germline & somatic mutations accompanying SMARCA4 mutations in SCCOHT	11/30/15
Barker, Bridget	G01	Prime	ALA	Virulence mechanisms of Coccidioides and the relationship to copper metabolism and lung damage	12/16/15
Huntelman, Matt	R01	Sub/Univ of Tennesse	NIH	Systems Genetics of Cognitive Aging and Alzheimer's Disease	12/16/15
Dhruv, Harshil	G01	Prime	Sidney Kimmel	Exploiting Hidden Weaknesses in Cell Cycle	12/02/15

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STATE OF ARIZONA

Joint Legislative Budget Committee

1716 WEST ADAMS
PHOENIX, ARIZONA 85007

(602) 926-5491

azleg.gov

DATE: March 31, 2016

TO: Senator Don Shooter, Chairman
Members, Joint Legislative Budget Committee

THRU: Richard Stavneak, Director RS

FROM: Eric Billings, Principal Fiscal Analyst EB

SUBJECT: Attorney General - Review of Allocation of Settlement Monies - Standard & Poor's Settlement

Request

Pursuant to A.R.S. § 44-1531.02, the Office of the Attorney General (AG) must submit for Committee review an expenditure plan of legal settlement monies deposited into the Consumer Remediation Subaccount of the Consumer Restitution and Remediation (CRR) Revolving Fund prior to spending those monies.

This request is for review of a $3,500,000 allocation from a legal settlement with the McGraw Hill Financial, Inc. and Standard & Poor's Financial Services, LLC (S&P). The AG proposes to spend $3,000,000 on homeless assistance programs and $500,000 to implement a consumer fraud education program.

Recommendation

The Committee has at least the following 2 options:

1. A favorable review of the $3,500,000 allocation plan.

2. An unfavorable review of the allocation plan.

Under a favorable review, the Committee may also consider the following provisions that:

(Continued)

A. Committee review does not constitute an agreement to fund these projects once these one-time monies are depleted.

B. Prior to expending the monies designated for homeless assistance, the AG is to report to the Committee on how it plans to allocate the funding and how its homeless program interacts with the homeless assistance efforts of the Department of Economic Security (DES) and the Arizona Department of Housing (ADH).

Analysis

In February 2013, Arizona sued S&P for misrepresenting to investors its financial ratings of structured finance securities, such as subprime mortgage-backed bonds. The federal government, the District of Columbia, and 18 other states filed similar suits. Arizona received $21.5 million in February 2015 as part of the settlement. The FY 2016 budget transfers $16.0 million of the legal settlement to the General Fund by the end of FY 2016.

Of the remaining $5.5 million S&P paid to the AG, $2.0 million was deposited into the Consumer Protection-Consumer Fraud (CPCF) Revolving Fund. Statute permits funds in the CPCF Revolving Fund to be used for direct consumer fraud activities as well as general operating expenses of the AG's office. Monies in the CPCF Revolving Fund do not require Committee review prior to expenditure.

Remediation Subaccount

The AG deposited the remaining $3.5 million from the S&P settlement into the Consumer Remediation Subaccount. This subaccount consists of monies collected as a result of settlements to rectify violations of consumer protection laws. The AG must submit an expenditure plan for Committee review before expending any monies from this subaccount.

Consumer Fraud Education

The AG proposes to use $500,000 to develop and implement a consumer fraud education program and possibly fund AG staff to support consumer fraud outreach efforts in local communities throughout Arizona. The AG will limit program administration costs to 10%.

Homeless Assistance

The AG would distribute the remaining $3.0 million to homeless assistance programs over a 24-month funding cycle. These monies would be distributed through a statewide competitive solicitation process to private nonprofits or public entities that provide services, including emergency shelter, transitional housing, permanent supportive housing, and support services. These one-time S&P settlement monies may be used to finance ongoing operations for homeless assistance programs. Given the one-time nature of the funds, the Committee may consider a provision that this review does not constitute an ongoing commitment to fund homeless assistance grants.

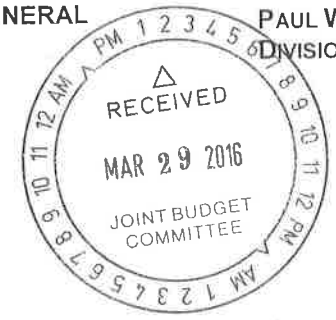
DES and ADH administer similar homeless funding programs. In FY 2016, DES and ADH estimate they will distribute approximately $5.9 million and $6.6 million in Total Funds, respectively, to support operations of emergency shelter services and homeless prevention programs. ADH will distribute another $54.5 million in rental assistance to low income households at risk for homelessness. As with the operating grants, DES has familiarity with distributing monies to a homeless shelter for a capital improvement project. In FY 2015, DES distributed a one-time capital grant of $500,000 to Phoenix Rescue Mission. Given DES and ADH's experience in these areas, the Committee may consider a provision that requires the AG, prior to expending the S&P monies, to report to the Committee on how its homeless program will interact with the homeless assistance efforts of DES and ADH.

RS/EB:kp

MARK BRNOVICH
ATTORNEY GENERAL

OFFICE OF THE ARIZONA ATTORNEY GENERAL
CIVIL LITIGATION DIVISION

PAUL WATKINS
DIVISION CHIEF



March 21, 2016

Representative Justin Olson, Chairman
Joint Legislative Budget Committee
Arizona House of Representatives
1700 West Washington Street
Phoenix, AZ 85007

The Honorable Don Shooter, Co-Chairman
Joint Legislative Budget Committee
Arizona State Senate
1700 West Washington Street
Phoenix, AZ 85007

Re: *State of Arizona v. McGraw Hill Financial, Inc. and Standard & Poor's Financial Services, LLC*

Dear Representative Olson and Senator Shooter:

Pursuant to A.R.S. § 44-1531.02(C), the Attorney General's Office respectfully submits the enclosed expenditure plan for review. As a result of a February, 2015 settlement with the McGraw Hill Financial, Inc. and Standard & Poor's Financial Services, LLC, the Attorney General secured approximately $21,500,000 for the State of Arizona. According to the court order, these funds may be used for attorneys' fees and other costs of investigation or litigation, for restitution, remediation, or for other consumer protection purposes, or for other uses as permitted by governing state law, within the discretion of the Attorney General. The enclosed Standard and Poor's Settlement Expenditure Plan allocates $3.5 million of those funds for remediation purposes in compliance with the court order and A.R.S. § 44-1531.02(C). For reference, copies of the court order and settlement agreement are attached.

If you have any questions, please feel free to contact me.

Sincerely,

Paul Watkins
Division Chief

Enclosures
Doc #4980152

OFFICE OF THE ARIZONA ATTORNEY GENERAL

CIVIL LITIGATION DIVISION

CONSUMER PROTECTION & ADVOCACY SECTION

STANDARD AND POOR'S SETTLEMENT EXPENDITURE PLAN

MAY 2015

Pursuant to A.R.S. §44-1531.02(C), this plan is submitted to the Joint Legislative Budget Committee for review. It outlines the expenditure of $3.5 million in remediation funds from the Standard and Poor's settlement secured by the Arizona Office of the Attorney General.

The Standard and Poor's Enforcement Action

In February 2015 a joint settlement agreement was reached between Arizona, 18 other states, the District of Columbia, and the U.S. Department of Justice with Standard and Poor's Financial Services, LLC (S&P), resolving allegations that S&P misled investors leading up to the 2008 financial crisis. The State filed a consumer fraud lawsuit in February 2013 alleging that S&P repeatedly reassured investors that it had procedures in place to maintain the objectivity and independence of its rating opinions. The State alleged that S&P's representations were false because its rating methodologies were directly influenced by a desire to please its paying clients, the issuers of the securities, and to generate additional ratings business. This settlement resolved Arizona's lawsuit along with similar suits filed by other states and the U.S. Department of Justice.

Arizona received approximately $21.5 million in the S &P settlement. Under the court order approving the settlement, those funds may be used by the Arizona Attorney General for attorneys' fees and other costs of investigation or litigation; for restitution, remediation, or for other consumer protection purposes; or for other uses as permitted by governing state law, within the Attorney General's discretion. Copies of the court order and settlement agreement are attached.

As a result of legislative action through Senate Bill 1469 (First Regular Session 2015, Section 138), $16 million of the $21.5 million settlement will be redistributed to the state general fund. Approximately $5.5 million remains. The Attorney General will apply $2 million of the $5.5 million as reimbursement of attorneys' fees and other investigation and litigation costs associated with the S&P case and for other consumer protection investigation and litigation efforts. Those funds will be deposited into the consumer protection-consumer fraud revolving fund pursuant to A.R.S. §44-1531.01.

This expenditure plan addresses $3.5 million in remediation funds which are allocated for consumer fraud education ($500,000) and homeless programs ($3 million) as explained further below.

Community Needs Assessment – Homeless Programs and Consumer Fraud Education

After conducting research and preliminary dialogue with potential stakeholders on housing issues of greatest importance to the community, the AGO learned that solutions to combat homelessness among families and individuals is a critical social issue that needs attention and funding opportunities.

Experts estimate that as many as 27,000 Arizonans experience homelessness on any given night. According to the AZ Department of Economic Security's "Homelessness in Arizona Annual Report 2014," in the current economic downturn, economic factors such as unemployment, evictions, foreclosures, and lack of affordable housing have significantly influenced the growth of first time homelessness in Arizona. The Arizona Republic recently reported that 1 in 4 renters use at least half their pay for rent, leaving many families perilously close to homelessness. The same factors create barriers for many who are currently homeless and are trying to work their way out of it.

Earlier this year, Maricopa County (home to 84% of Arizona's homeless population) closed an emergency overflow shelter, leaving an adjacent parking lot as a "makeshift" camp for homeless individuals to receive services and have a place to sleep. According to recent news reports, the county has identified some resources to fund a new overflow shelter through mid-November, but will need to find additional monies to keep the shelter operating, beyond that date. Although emergency shelter beds are in short supply, overall, Arizona has begun to see a decrease in homelessness the past year. This is due to an increase in permanent supportive housing beds, increased funding for homeless veterans, and the introduction of rapid re-housing and homeless prevention programs in some parts of the state. But there is still much more work to be done to address homelessness in Arizona. In addition to the need for more emergency shelter beds, more transitional and permanent supportive housing facilities and the staff to run them is required. For example, UMOM, the largest homeless shelter for families in Arizona, has a wait list that averages more than 60 families each week. For many homeless families, shelter is the first step on the permanent housing continuum. And the homeless aging adult population continues to grow, which is a concern both nationally and in Arizona. In 1990 the peak age of homeless was between 32 and 34 years old. By 2010, the peak age had moved to between 52 and 54 years of age. There is, and will continue to be, a need for additional respite facilities and medical recovery beds to serve this population.

In addition to the need for programs to assist the homeless, the Attorney General has identified an ongoing need for consumer fraud education. The statute that established the remediation subaccount explicitly recognizes consumer fraud education as a permissible use of remediation funds. *See* A.R.S. §44-1531.02(C). Accordingly, $500,000 of the S&P funds will be used for consumer fraud education programs that include multimedia advertising and community outreach to educate at risk populations about fraudulent consumer schemes and their prevention.

Expenditure Plan for the $3.5 million in remediation funds

The $3 million in remediation funds designated for homeless programs will be distributed through a statewide competitive solicitation process to fund program models that aid Arizonans who are most in need. The services will be delivered by private nonprofits or county or municipal government agencies, over a twenty four (24) month funding cycle. Program delivery models include emergency shelter, transitional housing, permanent supportive housing, and support services (see definitions below). The programs will assist individuals and families who are at risk of homelessness as well as those who are currently homeless. Proposals for capital improvements will also be considered, within budget parameters. Interest income accrued from the S&P settlement funds will be allocated to the contract or grant awarded programs.

To implement the $500,000 consumer fraud education program, the AGO will work with state contractors to formulate an appropriate message and develop a media plan to publicize it. We will seek to advertise in the same type of media as scammers do. Some of these funds may be used to fund AGO staff to support outreach efforts in local communities throughout Arizona. Program administration costs will be limited to 10%.

An AGO settlement program coordinator is in place to oversee the funding process and effective implementation of the funds and programs, to ensure compliance with the court order.

Definition of Program Models

Permanent supportive housing offers affordable housing that is not more than 30% of a household's income; no time limits for the length of stay; a lease and all rights of tenancy to the resident; and supportive services to help the resident achieve the maximum self-sufficiency and recovery. It has been shown to be a highly successful and cost effective solution to homelessness throughout Arizona and across the country.

Transitional Housing provides housing and appropriate support services to homeless individuals and families for up to 24 months to facilitate movement to independent living.

Emergency Shelters offer temporary housing for up to 120 days and case management to assess and stabilize immediate crisis needs.

Support Services can include basic necessities such as nutrition, clothing, hygiene supplies, as well as essential support such as case management, life skills training, job training, employment services, short term rent and utility assistance, transportation and referral to medical services.